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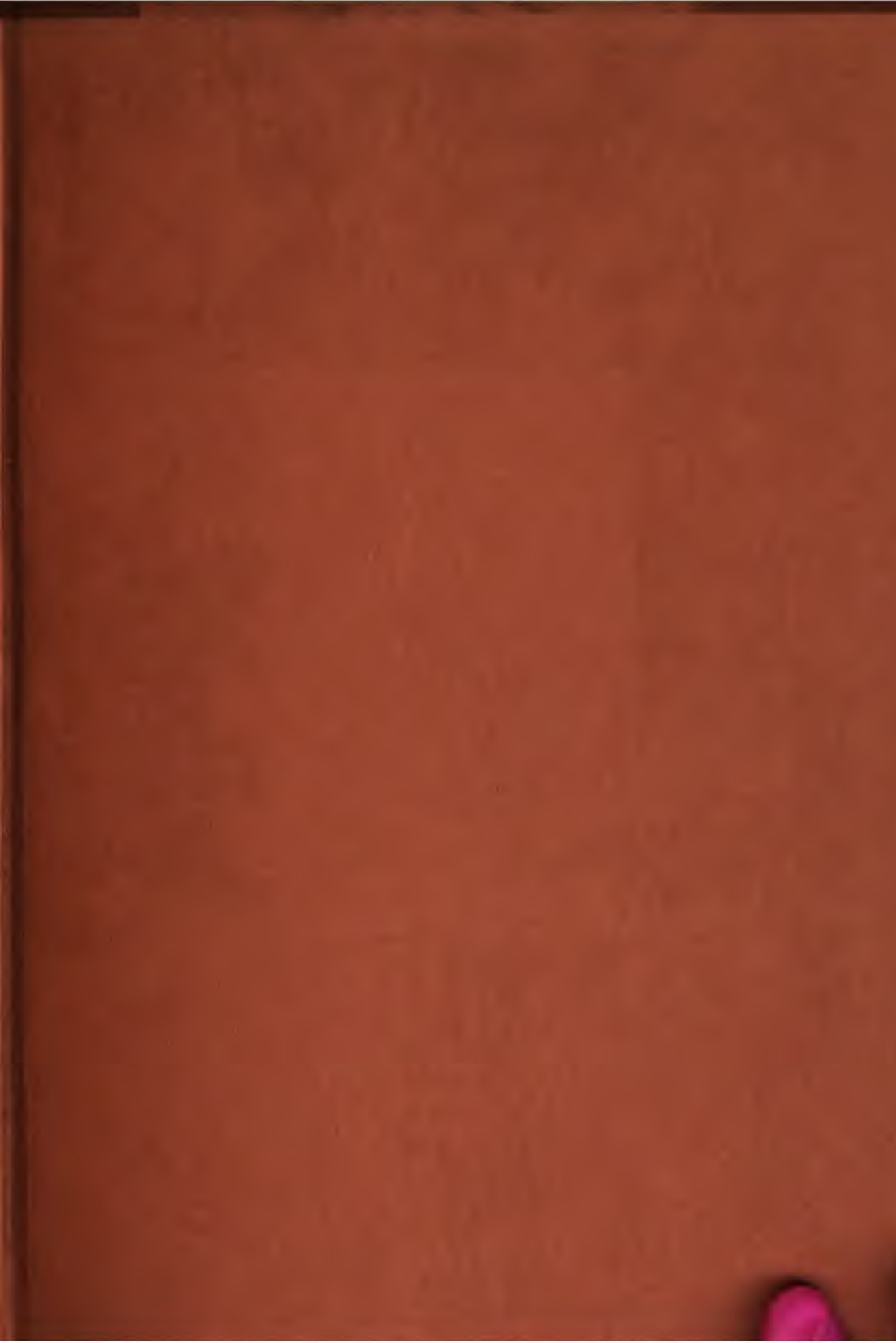
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PROCEEDINGS
OF THE
ZOOLOGICAL SOCIETY OF LONDON.

January 9, 1855.

Dr. Gray, Vice-President, in the Chair.

The following papers were read :—

1. DESCRIPTIONS OF TWENTY-SEVEN NEW SPECIES OF ACHATINELLA, FROM THE COLLECTION OF H. CUMING, ESQ., COLLECTED BY DR. NEWCOMB AND BY MONS. D. FRICK, LATE CONSUL-GENERAL OF FRANCE AT THE SANDWICH ISLANDS. BY DR. L. PFEIFFER.

(Mollusca, Pl. XXX.)

Genus ACHATINELLA.

Sect. NEWCOMBIA, Pfr. in Malak. Bl. 1854, p. 117.

1. *A. APTYCHA*, Pfr. (Pl. XXX. fig. 1.) *A. testa imperforata, dextrorsa, oblongo-conica, tenuiuscula, striatula, parum nitida, alba, cingulis punctatis, castaneis ornata; spira elongato-conica, apice obtusula; sutura subsimplice; anfract. 6½, convexiusculis, ultimo ¾ longitudinis subæquante, basi rotundato; apertura obliqua, truncato-ovali; intus lactea; plica columellari obsoleta, viz tortula; peristom. simplice, intus levissime labiato, margine dextro recto, columellari angusto, adnato.*

Long. $21\frac{1}{2}$, diam. 10 mill.

Hab. In insulis Sandwich (Frick).

Sect. AURICULELLA, Pfr.

(Testa subperforata, oblongo-conica; paries aperturalis lamella spiraliter intrante munitus, plica columellaris supera, dentiformis vel obsoleta; perist. expansiusculum. Species: *Helix auricula*, Fér., *Tornatellina Petitianae*, Pfr., *Partula pusilla*, Gould ?)

No. CCLXXXIV.—PROCEEDINGS OF THE ZOOLOGICAL SOCIETY.

2. *A. CEREÆ*, Pfr. (Pl. XXX. fig. 21.) *A. testa subperforata, dextrorsa, elongato-conica, tenui, striatula, diaphana, cerea; spira turrita, apice obtusa; anfr. 8, viz convexiusculis, ultimo $\frac{1}{2}$ longitudinis subæquante, basi subcompresso; apertura parum obliqua, truncato-ovali; lamella parietali tenui; plica columellari obsoleta; perist. albo, margine dextro breviter expanso, columellari dilatato, patente.*

Long. $8\frac{2}{3}$, diam. $3\frac{1}{2}$ mill.

Hab. In insulis Sandwich (Dr. Newcomb).

Sect. FRICKELLA, Pfr.

(Testa subperforata, oblonga; paries aperturalis lamella spiraliter intrante munitus; plica columellaris compressa, mediana; perist. simplex, rectum.)

3. *A. AMÆNA*, Pfr. (Pl. XXX. fig. 3.) *A. testa subperforata, ovato-oblonga, tenui, striatula, nitida, lutea, fusco obsolete unifasciata; spira convexo-conica, apice obtusula; sutura impressa; anfr. $6\frac{1}{2}$, convexiusculis, ultimo $\frac{3}{4}$ longitudinis subæquante, basi subattenuato; apertura obliqua, semiovali; lamina parietali subtransversa; plica columellari subduplicata, callosa, superposita, lamina spirali; perist. simplice, recto.*

Long. $11\frac{1}{2}$, diam. 5 mill.

Hab. In insulis Sandwich (Frick).

Sect. BULIMELLA, Pfr. in Malak. Bl. 1854, p. 119.

4. *A. CANDIDA*, Pfr. (Pl. XXX. fig. 4.) *A. testa dextrorsa, imperforata, ovato-conica, striatula, parum nitida, candida; spira convexo-conica, vertice minuto, nigro, acutiusculo; sutura levi, filomarginata; anfr. $6\frac{1}{2}$, planiusculis, ultimo $\frac{3}{4}$ longitudinis æquante, obsolete angulato, basi rotundato; apertura obliqua, truncato-auriformi; plica columellari mediocri, supera, obliqua, subcompressa; perist. fusco-violaceo, intus valide labiato, margine dextro expanso, columellari dilatato, plano, crasso, adnato.*

Long. 22, diam. 11 mill.

Hab. In insulis Sandwich (Frick).

5. *A. CINEROSA*, Pfr. (Pl. XXX. fig. 5.) *A. testa dextrorsa, imperforata, ovato-conica, solida, sublevigata, nitida, fusco-grisea, lineis fuscis et albis radiata; spira conica, apice acutiuscula, alba; sutura subcrenulata, albo-marginata; anfr. 6, viz convexiusculis, ultimo spira paulo brevior, basi rotundato; apertura parum obliqua, truncato-auriformi; plica columellari torta, valida, denticuliformi; perist. crasse albo-labiato, margine dextro substricto, breviter expanso, columellari crasso, adnato.*

Long. 21, diam. 11 mill.

β . *Fulvida, fusco radiata, sutura concolore.*

Hab. In insulis Sandwich (Frick).

6. *A. MACRÖSTOMA*, Pfr. (Pl. XXX. fig. 6.) *A. testa dextrorsa, imperforata, conico-ovata, solidula, levissime striatula, nitida, fulva, fasciis nonnullis pallidis et fuscis variegata; spira*

conica, obtusula; sutura submarginata; anfr. 5½, modice convexis, ultimo spiram æquante, superne turgido, medio attenuato, basi rotundato; apertura parum obliqua, ampla, obauriformi, intus alba; perist. albo, leviter labiato, margine dextro expanso, superne valde curvato, columellari dilatato, adnato.

Long. 21½, diam. 11 mill.

Hab. In insulis Sandwich (Frick).

7. A. FRICKI, Pfr. (Pl. XXX. fig. 7.) *A. testa subimperfurata, dextrorsa vel sinistrorsa, oblongo-ovata, solida, leviter striata, nitida, coloribus per varia; spira convexiusculo-conica, acuta; sutura anguste marginata; anfr. 6, vix convexiusculis, ultimo ¾ longitudinis subæquante, basi rotundato; apertura obliqua, obauriformi; plica columellari supera, torta, valida; perist. expansiusculo, obtuso, violaceo vel nigro labiato et limbato, margine dextro substricto.*

Long. 20–21, diam. 10½ mill.

α. *Isabellina, pallide fusco subfasciata, sutura alba.*

β. *Læte castanea, fasciis albis et saturatioribus ornata (sinistrorsa).*

γ. *Griseo-fusca, fasciis saturatioribus picta, sursum alba.*

δ. *Alba vel lutescens, fasciis 2–3 nigro-fuscis ornata.*

Hab. In insulis Sandwich (Frick).

8. A. PLANOSPIRA, Pfr. (Pl. XXX. fig. 8.) *A. testa imperforata, dextrorsa, ovato-pyramidata, solida, conferte striata et sub lente obsoletissime decussata, nitida, nigricante, fasciis nonnullis albis vel luteis, angustis ornata; spira conica, acutiuscula; sutura lineari, marginata; anfr. 5½, planis, ultimo spira paulo brevior, obsolete angulato, basi rotundato; apertura obliqua, obauriformi; plica columellari supera, valida, torta, alba; perist. crasse albo-labiato, margine dextro repando, breviter expanso, columellari adnato.*

Long. 19, diam. 9½ mill.

β. *Superne nigro-castanea, anfr. ultimo fulvo, brunneo lineato.*

Hab. In insulis Sandwich (Frick).

9. A. MONACHA, Pfr. (Pl. XXX. fig. 9.) *A. testa imperforata, ovato-conica, solida, oblique striatula, parum nitida, griseo-alba, lineis fuscis varie cincta; spira elevato-conica, acutiuscula; sutura leviter marginata, subcrenulata; anfr. 6, convexiusculis, ultimo spira paulo brevior, basi rotundato; apertura obliqua, late obauriformi; plica columellari supera, obliqua, mediocri; perist. sublabiato, margine dextro breviter expanso, columellari crasso, flexuoso, adnato.*

Long. 20, diam. 10½ mill.

Hab. In insulis Sandwich (Frick).

10. A. VIDUA, Pfr. (Pl. XXX. fig. 10.) *A. testa subimperfurata, dextrorsa, conico-ovata, striatula, sub lente minutissime decussata, nitida, saturate fusca, cæruleo-albido bifasciata; spira convexo-conica, apice obtusula; sutura subsimplice; anfr. 6, vix convexiusculis, ultimo spira paulo brevior, basi rotundato; aper-*

tura parum obliqua, truncato-oblonga; plica columellari obsoleta, viz torta; perist. intus valide labiato, margine dextro anguste reflexo, columellari dilatato, subadnato.

Long. 18½, diam. 10 mill.

Hab. In insulis Sandwich (Frick).

11. A. MULTICOLOR, Pfr. (Pl. XXX. fig. 11.) *A. testa imperforata, dextrorsa vel sinistrorsa, conico-oblonga, solida, striata et sub lente minutissime decussata, nitida, lutea vel albida, fasciis nigro-castaneis varie ornata, rarius unicolore; spira elongato-conica, apice subattenuata, acutiuscula; sutura marginata; anfr. 6, planiusculis, ultimo ⅔ longitudinis subæquante, basi rotundato; apertura obliqua, truncato-obauriformi; plica columellari supera; valida, torta; perist. nigro-limbato, margine externo substricto, breviter expanso, columellari dilatato, subadnato.*

Long. 17, diam. 9 mill.

Hab. In insulis Sandwich (Frick).

12. A. ATTENUATA, Pfr. (Pl. XXX. fig. 12.) *A. testa subperforata, ovato-turrita, tenuiuscula, striatula et sub lente granulata, alba, strigis corneis sæpe angulosis picta; spira concavo-turrita, obtusula; sutura distincte filomarginata; anfr. 5½, superis planis, sequentibus convexis, ultimo ⅔ longitudinis subæquante, rotundato, basi subcompresso; apertura obliqua, subtetragono-auriformi; plica columellari valida, compressa, linguæformi; perist. acuto, breviter expanso, intus labiato, margine basali cum columellari dilatato intus angulum formante.*

Long. 16, diam. 7½ mill.

Hab. In insula Mani, Sandwich (Frick).

13. A. SWAINSONI, Pfr. (Pl. XXX. fig. 13.) *A. testa sinistrorsa, imperforata, ovato-conica, solida, sublævigata, nitida, albida, fulvo tenuiter strigata; spira conica, apice fulva, acutiuscula; sutura marginata; anfr. 5½, convexiusculis, ultimo ⅔ longitudinis subæquante, infra suturam turgido, basi rotundato; apertura fere diagonali, obauriformi; plica columellari supera, valida, nodiformi; perist. nigro-fusco limbato, margine externo reflexiusculo, intus crasse labiato, columellari crasso, flexuoso, adnato.*

Long. 20, diam. 11 mill.

β. *Virenti-lutea, anfr. ultimo antice castaneo.*

Hab. In insulis Sandwich (Frick).

14. A. SOWERBYANA, Pfr. (Pl. XXX. fig. 14.) *A. testa sinistrorsa, imperforata, conico-oblonga, solidula, sublævigata, glutinoso-nitente, fulvo-lutescente, saturatius subradiata; spira convexiusculo-conica, subacuta; sutura marginata; anfr. 6, viz convexiusculis, ultimo spira paulo brevior, basi saccato-rotundato; apertura obliqua, obauriformi, intus alba; plica columellari supera, valida, torta, rosea; perist. roseo-labiato, margine externo breviter expanso, columellari dilatato, adnato.*

Long. 18, diam. 9 mill.

β. *Paulo minor, flavo-albida, basi castanea vel viridula.*

Hab. In insulis Sandwich (Frick).

15. *A. DOLIUM*, Pfr. (Pl. XXX. fig. 15.) *A. testa perforata, ovato-conica, tenuiuscula, leviter striatula, parum nitente, pallide lutescente, fasciis et strigis angustis, fusculis variegata; spira conica, acutiuscula; sutura vix marginata; anfr. 6, convexis, ultimo spiram paulo superante, ventroso, basi subcompressa; apertura obliqua, obauriformi, intus alba; plica columellari alta, dentiformi, alba; perist. tenui, intus sublabiato, margine dextro anguste expanso, columellari dilatato, patente.*

Long. 17, diam. 10 mill.

Hab. In insulis Sandwich (Dr. Newcomb).

16. *A. FORBESIANA*, Pfr. (Pl. XXX. fig. 16.) *A. testa subperforata, dextrorsa vel sinistrorsa, ovato-conica, solida, conferte striatula, nitida, grisea vel albida, fasciis crebris griseis vel fuscis, saepe confluentibus picta; spira exacte conica, sursum alba, apiculo nigro acutiusculo; sutura marginata; anfr. 6, convexiusculis, ultimo spira paulo brevior, rotundato; apertura obliqua, obauriformi; plica columellari supera, valida, nodiformi; perist. fusculo vel carneo limbato, margine externo breviter expanso, columellari crasso, subadnato.*

Long. 19, diam. 10½ mill.

Hab. In insulis Sandwich (Frick).

Sect. LAMINELLA, Pfr. in Malak. Bl. 1854, p. 126.

17. *A. RUDIS*, Pfr. (Pl. XXX. fig. 17.) *A. testa subimperfurata, ovato-turrita, solida, ruditer striata, fulvo-fusca; spira elevato-conica, acutiuscula; sutura simplice, levissime crenulata; anfr. 7½, modice convexis, ultimo ½ longitudinis vix formante, rotundato; apertura obliqua, sinuato-ovali; plica columellari mediana, laminaeformi, subtransversa; perist. simplice, recto, acuto, margine columellari dilatato, reflexo, subadnato.*

Long. 21, diam. 11½ mill.

β. *Castanea, fascia mediana et basi lutescentibus, spira minus elongata.*

Hab. In insulis Sandwich (Frick).

18. *A. FUSIFORMIS*, Pfr. (Pl. XXX. fig. 18.) *A. testa imperforata, fusiformi-oblonga, tenuiuscula, striatula, saturate fusca, pallide conspersa et oblique lineolata; spira convexo-conica, apice nigra, acuta; sutura simplice; anfr. 7, vix convexiusculis, ultimo ¾ longitudinis formante, basi attenuato; apertura obliqua, ellipsoidea; plica columellari levi, compressa, subduplicata; perist. simplice, recto, margine dextro regulariter arcuato, columellari anguste adnato.*

Long. 14, diam. 6¾ mill.

Hab. In insulis Sandwich (Frick).

Sect. ACHATINELLASTRUM, Pfr. in Malak. Bl. 1854, p. 133.

19. *A. NAPUS*, Pfr. (Pl. XXX. fig. 19.) *A. testa imperforata, dextrorsa, turrita, solida, striatula, nitidula, albida, fasciis griseo-carneis et interdum lineis castaneis cingulata; spira elongato-conica, apice alba, acuta; sutura distincte marginata; anfr. 6½.*

superis planis, sequentibus convexiusculis, ultimo $\frac{1}{2}$ longitudinis subæquante, rotundato; apertura diagonali, truncato-auriformi; plica columellari supera, mediocri, leviter torta; perist. intus labiato, margine dextro recto, columellari subdilato, adnato.

Long. $19\frac{1}{2}$, diam. $10\frac{1}{2}$ mill.

Hab. In insulis Sandwich (*Frick*).

20. *A. VENTROSA*, Pfr. (Pl. XXX. fig. 20.) *A. testa imperforata, ovato-conica, solidula, striata, alba, deorsum epidermide fulva, nigro-strigata vestita; spira conica, obtusa; anfr. $5\frac{1}{2}$, inflatis, ultimo spira paulo brevior, basi rotundato; apertura fere diagonali, late auriformi, intus alba; plica columellari crassa, dentiformi; perist. intus labiato, margine dextro recto, substricto descendente, leviter antrorsum arcuato, columellari brevi, adnato.*

Long. $17\frac{1}{2}$, diam. 11 mill.

Hab. In insulis Sandwich (*Dr. Newcomb*).

21. *A. PULCHELLA*, Pfr. (Pl. XXX. fig. 2.) *A. testa imperforata, ovato-conica, sublaevigata, nitida, fulva, fasciis nigro-viridibus et interdum fascia mediana alba ornata; spira conica, versus apicem acutum attenuata, alba, sutura filomarginata; anfr. $5\frac{1}{2}$, convexiusculis, ultimo $\frac{3}{4}$ longitudinis subæquante, rotundato; apertura fere diagonali, subietragono, auriformi; plica columellari supera, dentiformi, valida; perist. intus valide labiato, margine dextro recto, strictiusculo, columellari reflexo, subadnato.*

Long. $15\frac{1}{2}$, diam. 10 mill.

Hab. In insulis Sandwich (*Frick*).

22. *A. GRACILIS*, Pfr. (Pl. XXX. fig. 22.) *A. testa imperforata, gracili, turrita, solidula, sublaevigata, alba, fusco bifasciata; spira elongata, regulariter attenuata, apice obtusula; sutura simplice; anfr. 8, planiusculis, ultimo $\frac{1}{2}$ longitudinis fere æquante, basi rotundato; apertura subverticali, sinuato-ovali; plica columellari mediana, subcompressa; perist. simplice, margine dextro recto, leviter arcuato, columellari dilatato, adnato.*

Long. 14, diam. $5\frac{1}{2}$ mill.

Hab. In insulis Sandwich (*Dr. Newcomb*).

23. *A. CRASSIDENTATA*, Pfr. (Pl. XXX. fig. 23.) *A. testa imperforata, sinistrorsa, solidula, striatula, parum nitida, alba, fasciis nonnullis luteis ornata, interdum basi virenti-lutea; spira conica, apice obtusula; sutura marginata; anfr. $5\frac{1}{2}$, convexiusculis, ultimo $\frac{3}{4}$ longitudinis subæquante, basi rotundato; apertura diagonali, sinuato-semiovali; plica columellari supera, crassissima, dentiformi; perist. simplice, margine esterno acuto, leviter arcuato, columellari brevi, angusto.*

Long. 20, diam. 11 mill.

Hab. In insulis Sandwich (*Frick*).

24. *A. VALIDA*, Pfr. (Pl. XXX. fig. 24.) *A. testa imperforata, dextrorsa (rarius sinistrorsa), ovato-conica, solida, sublaevigata, cinereo-fusca, pallide subfasciata et nigro strigatula; spira elevata, conica, apice fusca, acuta; sutura marginata, alba; anfr. 6, pri-*

mis 3 planis, sequentibus convexiusculis, ultimo $\frac{1}{2}$ longitudinis subæquante, inflato; apertura obliqua, truncato-auriformi; plica columellari supera, nodiformi, parum torta; perist. fusco limbato, margine dextro subrecto, strictiusculo, columellari dilatato, ap-presso.

Long. $21\frac{1}{2}$, diam. 13 mill.

β . *Nigra, pallide interrupte lineolata vel fasciata.*

Hab. In insulis Sandwich (*Frick*).

25. *A. GLOBOSA*, Pfr. (Pl. XXX. fig. 25.) *A. testa subimperf-
forata, dextrorsa, conico-globosa, tenuiuscula, striatula, alba, lineis
fuscis cingulata; spira brevi, convexiusculo-conica, subacuta;
sutura levi, submarginata; anfr. 5, modice convexi, ultimo ven-
troso, spiram subæquante, basi fusco; apertura obliqua, subtetra-
gono-ovali, intus margaritacea; plica columellari levi, viz torta;
perist. acuto, fusco-limbato, intus albo-sublabiato, margine colu-
mellari incrassato, subadnato.*

Long. 17, diam. $11\frac{1}{2}$ mill.

Hab. In insulis Sandwich (*Frick*).

26. *A. CONSPERSA*, Pfr. (Pl. XXX. fig. 26.) *A. testa imper-
forata, dextrorsa, conico-ovata, tenuiuscula, conferte striata, satu-
rate fusca, maculis sordide albidis, strigas angulosas formantibus
conspersa; spira convexo-conica, apice acuta; sutura simplice;
anfr. 6, superis planiusculis, penultimo convexiore, ultimo $\frac{1}{2}$ longi-
tudinis subæquante, rotundato; apertura parum obliqua, sinuato-
elliptica; plica columellari subbasali, compressa; perist. simplice,
recto, margine columellari nullo.*

Long. 18, diam. $10\frac{1}{2}$ mill.

Hab. In insulis Sandwich (*Frick*).

Sect. LABIELLA, Pfr. in Malak. Bl. 1854, p. 142.

27. *A. DENTATA*, Pfr. (Pl. XXX. fig. 27.) *A. testa imperfo-
rata, conico-ovata, solida, striatula, nitida, sub epidermide fulvida
alba; spira conica, obtusa; anfr. 7, planiusculis, ultimo $\frac{1}{2}$ longi-
tudinis subæquante, basi rotundato; apertura fere verticali, sub-
rhombea, basi angulata; plica columellari profunda, compressa;
perist. albo-callosa, marginibus callo junctis, dextro recto, medio
introrsum unidentato; columellari dilatato, adnato.*

Long. 12, diam. $5\frac{1}{2}$ mill.

Hab. In insulis Sandwich (*Dr. Newcomb*).

2. DESCRIPTIONS OF NINE NEW SPECIES OF LAND-SHELLS, IN THE COLLECTION OF H. CUMING, ESQ. BY DR. L. PFEIFFER.

1. *BULIMUS LATILABRIS*, Pfr. *B. testa imperforata, succinoidea,
tenui, longitudinaliter subgranulato-rugulosa, flavida, strigis
angulatis, castaneis subtessellata, vel ad suturam interrupte
fasciata; spira brevi, conica, acutiuscula; anfr. 4, rapide ac-
crecentibus, viz convexiusculis, ultimo fere $\frac{1}{2}$ longitudinis for-
mante; columella ad apicem spiræ aperta; apertura subverti-*

cali, acuminato-ovali, intus margaritacea; perist. late expanso et reflexiusculo, marginibus callo tenui junctis, columellari arcuato, calloso, albo.

Long. 49, diam. 26 mill.

Hab. Santa Fé de Bogota.

2. *BULIMUS STRANGEI*, Pfr. *B. testa subcompressa umbilicata, fusiformi-oblonga, tenuiuscula, striata et striis spiralibus levissime decussata, fulvida, ad suturam crenulatam albo-fasciata; spira elevato-conica, apice obtusa; anfr. 5, vix convexiusculis, ultimo spiram superante, antice breviter arcuatim ascendente, basi attenuato; apertura vix obliqua, elongato-ovali, intus vitellina, nitida; columella alba, longe plicata; perist. albo, subincrassato, margine dextro expanso et reflexo, superne arcuato, tum strictiusculo, columellari dilatato, plano, patente.*

Long. 46, diam. 17 mill.

Hab. Eddystone Island, Australian Seas.

3. *BULIMUS EDDYSTONENSIS*, Pfr. *B. testa imperforata, ovato-conica, tenuiuscula, confertim striata et suboblique malleata, sericea, saturate castanea; spira exakte conica, apice acuta; sutura levi, subcrenata; anfr. 6, convexiusculis, ultimo spira paulo longiore, basi rotundato; columella tenui, subplicata, recedente, aurantiaca; apertura parum obliqua, subangulato-ovali, intus margaritacea, virenti-livida; perist. simplice, vix expansiusculo, obtuso, sordide aurantiaco, margine columellari vix dilatato.*

Long. 74, diam. 34 mill.

Hab. Eddystone Island, Australian Seas.

4. *BULIMUS SIGNIFER*, Pfr. *B. testa perforata, subfusiformi-oblonga, tenui, confertim et leviter plicato-striata, albida, strigis spadiceis serratis irregulariter signata; spira inflato-conica, acutiuscula; anfr. 6, superis planiusculis, penultimo convexo, ultimo spiram subæquante, basi attenuato; columella torta, recedente; apertura vix obliqua, oblonga; perist. simplice, margine dextro sublate expanso, columellari dilatato, abrupte reflexo, patente.*

Long. 33, diam. 13½ mill.

Hab. Venezuela?

5. *BULIMUS CERATACME*, Pfr. *B. testa profunde et anguste rimata, subfusiformi-oblonga, solidula, irregulariter striatula, parum nitente, carneo-albida; spira elongata, apice cornea, obtusula; anfr. 7½, parum convexis, medianis remote et obsolete corneo-strigatis, ultimo ¼ longitudinis vix superante, basi subattenuato; columella recedente, leviter plicata; apertura vix obliqua, oblongo-ovali; perist. acuto, intus sublabiato, marginibus approximatis, callo tenui junctis, dextro expanso, superne arcuato, columellari patente.*

Long. 18½, diam. 6 mill.

Hab. Peru?

6. *BULIMUS PEREGRINUS*, Pfr. *B. testa perforata, subfusiformi-turrita, solidiuscula, striatula, cerea; spira convexo-turrita, apice obtusula; sutura subcrenulata; anfr. 8½, viz convexiusculis, ultimo ¼ longitudinis subæquante, basi subcompresso; apertura obliqua, oblonga, utrinque angulata; perist. simplice, recto, marginibus conniventibus, dextro arcuato, columellari fere stricto, a basi aperturæ dilatato, patente, planato.*
 Long. 18, diam. 5½ mill.

Hab. —?

7. *SPIRAXIS MANDARINA*, Pfr. *Sp. testa imperforata, cylindraceo-turrita, solidula, lævigata, nitida, lutescenti-cerea; spira elongata, apice attenuata, obtusa; sutura submarginata; anfr. 8, primis rotundatis, sequentibus modice convexis, ultimo ¼ longitudinis subæquante, basi rotundato; columella callosa, torta, subduplicata; apertura obliqua, elliptico-ovali; perist. simplice, recto, margine dextro superne antrorsum arcuato.*

Long. 23, diam. 6 mill.

Hab. China.

Allied to *Achatina erecta*, Bens., which is also a *Spiraxis*. *Achatina Dunkeri*, Pfr. must likewise be transferred to the same genus.

8. *PUPA (ENNEA) OBOVATA*, Pfr. *P. testa breviter arcuato-rimata, obovata, tenui, lævigata, hyalina; spira ventrosa, sursum turgida, obtusa; sutura lineari-marginata; anfr. 7, primis 4 convexis, sequentibus subplanis, ultimo ¼ longitudinis viz attingente, attenuato, basi compresso, latere dextro scrobiculato; apertura verticali, subtriangulari, plica profunda columellari, lamina valida, intrante ad angulum parietis, denticulis 2 marginis dextri et singulo subbasali coarctata; perist. albo, breviter expanso.*

Long. 6, diam. supra medium 3 mill.

Hab. Liberia.

9. *PUPA (ENNEA) CEYLANICA*, Pfr. *P. testa breviter rimata, subcylindrica, striatula, pellucida, nitida, lutescenti-hyalina; spira versus apicem obtusum viz attenuata; sutura sub lente regulariter denticulata; anfr. 8½, convexis, ultimo ¼ longitudinis non attingente, latere constricto et antice profunde scrobiculato, basi gibbo; apertura subverticali, truncato-oblonga, plica profunda columellari, plica laminæformi juxta angulum parietis, dente valido in medio marginis dextri et minore basali coarctata; perist. albo, nitido, reflexiusculo.*

Long. 6½, diam. 2 mill.

Hab. Ceylon (*E. L. Layard*).

3. NOTICE OF THE HORNS OF AN UNRECORDED SPECIES OF PRONG HORN (*ANTILOCAPRA*), IN THE COLLECTION OF THE DERBY MUSEUM, LIVERPOOL. BY DR. JOHN EDWARD GRAY, F.R.S., V.P.Z.S. ETC.

Some years ago the late Earl of Derby showed me a pair of horns attached together by the skin of the forehead, which he had then

recently received; and more lately, Mr. Moore, the Keeper of the Derby Museum, submitted these horns to my examination, requesting my opinion on them. At his request I bring a short notice of them before the Society, in hopes to obtain further information respecting them, and a specimen of the animal itself, should it prove to be a distinct species of the anomalous American Antelope. The horns are most probably from America; but this is not certain, as the special locality has not been recorded, nor the person from whom they were obtained.

The colour, substance, and texture of the hair on the skin of the forehead attached to the horns, exactly resembles that of the Cabrit or Prong-horn (*Antilocapra Americana*, Gray, Cat. Mam. B.M. p. 117), and if it were not for the very peculiar form of these horns, I should have been inclined to have considered them as only the deformed horns of that animal; but both the horns are alike and have the same peculiarities, which is not usual in malformations; under these circumstances it appears better to regard them provisionally as belonging to a distinct species, to be established or erased from the list as further knowledge may decide.

There can be no doubt of the position of the horns, as a part of the upper surface of the orbit is to be observed, with the remains of the eyelids and eyebrows at the base of the left horn.



Fig. 1. *Antilocapra Americana*.



Fig. 2. *Antilocapra anteflexa*.

ANTILOCAPRA ANTEFLEXA.

The horns compressed, dark brown, rugose, rounded and curved and arched behind, compressed in front, becoming more so as they reach the supra-medial frontal process. The apex subtrigonal, evidently compressed and angularly bent forwards rather above the compressed frontal process, with a deep furrow rather on the inner side of the middle of the hinder upper part of the bend; the inner edge of the recurved tip is rounded, the outer compressed, rather produced and sharp-edged; the extreme tip is roundish, tapering, with

a white end. They are considerably larger than the horns of the usual species.

In the *Cabrit* or *Antilocapra Americana*, the horns are thick, rounded on each edge and produced into a compressed submedial frontal process, which is gradually bent towards the inner side. The tips of the horns are rounded, becoming nearly cylindrical, and are gradually and regularly arched backwards and inwards with a bluntish extreme end.

The horns of the genus are peculiar for being lined internally with a close velvety coat of short hair, directed towards the tip of the cavity; and the whole outer surface of the horn appears to be formed of agglutinated hair, some separate hairs being seen on the surface.

The peculiarity in the internal structure of the substance of the horns of this genus shows, like the branched external form, a similarity to the horns of the Deer; the hairy horn being the analogue of the deciduous velvet of the Deer, and the permanent hairy coat of the Giraffe. The ring of hair round the base of the outer surface is to be observed equally developed in the horn from Lord Derby's Collection and in that of the common *Prongbuck*.

4. ON THE GENUS *CULICIVORA* OF SWAINSON, AND ITS COMPONENT SPECIES. BY PHILIP LUTLEY SCLATER, M.A., F.Z.S.

The genus *Culicivora* (as established by Mr. Swainson in the Zoological Journal for 1827) has the *Muscicapa stenura* of Temminck for its type, but embraces also the *Muscicapa cærulea* of Wilson and its affines. Now these birds belong in reality to two very different groups; the *M. stenura* being a *Tyrannine*, while the *M. cærulea* can hardly be placed within the limits of that family, but must be arranged either with the old-world *Muscicapines* (as in Bonaparte's *Conspectus*) or with the *Sylvians* (as in Gray's *Genera of Birds*). Dr. Cabanis in his *Ornithologische Notizen*, in Wiegmann's *Archiv*, has rightly separated these two forms, but has unfortunately chosen to call the *M. cærulea* and its allies *Culicivora*, and made a new name *Hapalura* for the *M. stenura*—the true *Culicivora* of Swainson. Under these circumstances *Hapalura* is a mere useless synonym of *Culicivora*, Sw., and a new name is required for the group containing *M. cærulea*, and commonly known as *Culicivora*. I therefore propose for it the term *Polioptila*, from the general grey colouring of the plumage.

The species of this genus that I am at present acquainted with are the following:—

1. *POLIOPTILA CÆRULEA* (Linn.).

Motacilla cærulea, Linn. *Muscicapa cærulea*, Wils. Am. Orn. ii. p. 164. pl. 18. fig. 5; Audub. pl. 84 ♂ & ♀.

♂ *Cæruleo-cinerea, fronte et superciliis nigris: subtus cærulescenti-alba, rectricibus extimis albis.*

♀ *Mari similis, sed linea superciliari et frontali nulla.*

Hab. United States, Texas, and Mexico.

I cannot discover how the *Culicivora mexicana*, Bp. Consp. p. 316 (of which I have examined the type in the Berlin Museum), differs from this species. It appears to me to be merely a female of the present bird.

2. POLIOPTILA DUMICOLA (Vieill.).

El Contra-maestre azuladillo, Azara, no. 158, unde *Sylvia dumicola*, Vieill. *C. dumicola*, d'Orb. Voy. Ois. p. 331. *C. boliviana*, Sclater, in Proc. Zool. Soc. 1852, p. 34. pl. 47.

♂ *Supra plumbea : fronte et genis nigris : subtus plumbescenti-alba, ventre et rectricibus utrinque extimis albis.*

♀ *Fronte et regione auriculari plumbeis concoloribus.*

Hab. Paraguay (Azara); Corrientes and Buenos Ayres in the Argentine Republic, and Chiquitos and Moxos in Bolivia (d'Orb.).

D'Orbigny and Lafresnaye in their Synopsis in the *Magazin de Zoologie*, Hartlaub in his Index to Azara, and Bonaparte in his *Consp.*, have all more or less confounded the synonyms of this species with those of the next; indeed the latter author has united all the synonyms under one head, and I was thus led into the error of describing the present bird as new. It is without doubt however the *Azuladillo* of Azara, and consequently must bear the specific name '*dumicola*' of Vieillot. Lichtenstein's name '*bivittata*' belongs to the next species, though the above-mentioned authors have quoted it as synonymous with this.

3. POLIOPTILA LEUCOGASTRA (Max.).

Pl. Enl. 704. fig. 1, unde *Motacilla cærulea*, var. β. Gm. *Sylvia leucogastra*, Max. Beit. iii. 710. *S. bivittata*, Licht. in Mus. Berol. *C. atricapilla*, Sw. Zool. Ill. n. s. pl. 57. *C. leucogastra*, Gray's Gen. ? *C. dumicola*, Bp. Consp. p. 316.

♂ *Cinerea, pileo nigro : subtus alba, rectricibus utrinque extimis albis.*

♀ *Pileo concolore cinereo.*

Hab. Brazil; Bahia (Pr. Max.); Monte Video (Mus. Berol.); Cayenne (Buffon); New Grenada.

This species is described by Prince C. L. Bonaparte in his *Consp.* as *C. dumicola*, from which it may be easily distinguished by its black head.

4. POLIOPTILA BILINEATA (Licht.).

Sylvia bilineata, Licht. in Mus. Berol. *Culicivora bilineata*, Bp. Consp. p. 316.

♂ *Supra plumbea, pileo nigro : loris superciliis et corpore subtus albis : primariis anguste cinereo, secundariis latius albo marginatis : rectricibus extimis apice albis.*

♀ *Pileo concolore plumbeo : superciliis albis.*

Hab. Cartagena (Mus. Berol.).

The type-specimens in the Berlin Museum are the only examples I have seen of this species; which may be at once distinguished from all the preceding by its white superciliary stripe.

5. REMARKS ON THE ARRANGEMENT OF THE JACAMARS (*GALBULIDÆ*), WITH DESCRIPTIONS OF SOME NEW SPECIES.

BY PHILIP LUTLEY SCLATER, M.A., F.Z.S.

(Aves, Pl. LXXVII.)

Since I wrote some articles on the *Galbulidæ*, which appeared in Sir William Jardine's Contributions to Ornithology, and the little Synopsis of the family afterwards printed apart, I have lost no opportunity of examining specimens of these birds in several museums which I have visited. In so doing I have acquired some additional information concerning them, which I now purpose bringing before the Society, together with characters of what I believe to be three hitherto unrecognized species.

Genus 1. *GALBULA*.

1. *viridis*, Lath. Synopsis of the *Galbulidæ*, p. 2. sp. 1.

Dr. Cabanis, in his article upon these birds in Ersch and Gruber's Encyclopædie, calls the Amazon specimens true '*viridis*,' and separates the Cayenne and Guiana bird from them, under Swainson's title '*viridicauda*.' I cannot myself discover much difference between them. Prince C. L. Bonaparte quotes as a species '*quadricolor*,' Verreaux, a MS. name for which no specific characters have been published. A specimen so labelled in the British Museum is from Peru, but seems to me barely separable from *G. viridis*.

2. *rufoviridis*, Cab. Enc. d. W. u. K. vol. lii. sect. 1. p. 308.
G. maculicauda, Synopsis, p. 2. sp. 2.

Dr. Cabanis' name has, I believe, a few months' precedence in point of date over my '*maculicauda*,' and must therefore be used for this species. As additional localities, I have now: River Tocantins, Brazil (Mr. Wallace), and Bolivia (Bridges, in Mus. Brit.).

3. *melanogenia*, Sclater. Synopsis, p. 3. sp. 3.

I have since seen other specimens of this species, both male and female, all from Central America.

4. *ruficauda*, Cuv. Synopsis, p. 3. sp. 4.

Add, as localities: Tobago (Kirk); Cumana (Dyson); Cartagena (Mus. Berol.).

These four species are, as I have already remarked (Cont. to Orn. 1852, p. 93), very closely allied to one another, but may be distinguished by the colouring of the rectrices. They are not, however, placed together in Prince C. L. Bonaparte's arrangement in his *Conspectus Zygodactylorum*.

5. *tombacea*, Spix (*cyanescens*, Deville).

From the Upper Amazon and eastern provinces of Peru.

6. *GALBULA FUSCICAPILLA*, Sclater, sp. nov. (Pl. LXXVII.)

♂ *Late viridis; fronte et pileo summo fuscis: nucha paululum cyanescente: mento albido: ventre crissoque intense castaneis:*

rectricibus extimis rufis, quatuor mediis supra viridibus dorso concoloribus. Long. tota 8·0, alæ 3·0, caudæ 3·5.

♀ *Ventre valde dilutiore.*

Hab. In Nova Grenada, Bogota.

I have hitherto confounded this species with the *G. tombacea*, but the examination of several examples of the latter bird in the continental museums has convinced me that they are quite distinct, the *tombacea* presenting no appearance of the fuscous crown which distinguishes this species. In one of my specimens, apparently the most adult, the green descends much lower down than in others I have seen. The two outer rectrices of this bird are, as is usual in this genus, abnormally small. The first outer normal pair are rufous, tipped and externally edged with green. This green is blackish below, but above vivid as the back. The next two pair are wholly rufous. The middle four are vivid green above, and blackish-green below; the submedial pair having some rufous colouring inwardly towards the base.

7. *albirostris*, Latham. Synopsis, p. 5. sp. 6.

8. *chalcocephala*, Deville. Synopsis, p. 5. sp. 7.

I have lately seen many specimens ♂ and ♀ of this species. The male has a white bar on the throat, as in *G. albirostris*, with which it is certainly *very* closely allied. In his 'Conspectus Zygodactylorum,' Prince C. L. Bonaparte unites this species with *G. leucogastra*, with which it has nothing to do. In the 'Conspectus Anisodactylorum,' the origin of this error is attributed to an opinion of mine that they were identical (!), which however I never either expressed or entertained.

9. *cyanicollis*, Cassin. Synopsis, p. 6. sp. 8.

Specimens of this bird in the Berlin Museum,—the types of *G. cyanopogon*, Cab.,—are from Cametá, which is on the south of the Amazon, in the province of Para. The female is pale rufous below, instead of chestnut-red.

10. *leucogastra*, Vieill. Synopsis, p. 6. sp. 9.

11. *chalcothorax*, Sclater, Proc. Zool. Soc. 1854, p. 110.
From Quixos in Ecuador.

Genus 2. UROGALBA, Bp.

1. *paradisea* (Linn.). Synopsis, p. 8. sp. 11.

2. UROGALBA AMAZONUM, Sclater, sp. nov.

U. purpurascenti-nigra: alis caudaque et hujus tectricibus superioribus æneis: mento nigrescente, gutture late albo: pileo antico albescenti-fusco: rostro pedibusque nigris.

Long. tota 13·0, alæ 3·8, caudæ 6·5.

Hab. In Brasil. Breasil, Para, et fl. Amazonum.

Obs. Similis *U. paradiseæ*, sed major et pileo antico albescente fusco.

It is not without hesitation that I separate this bird from the former. I have seen many examples of it from North Brazil, and have always remarked that they differ from the Cayenne *U. paradisea* in size and in the whiteness of the forehead. Mr. Wallace brought specimens from the neighbourhood of Para, whence I believe came also my type, which I purchased in Hamburg. I may remark that there are many other corresponding species of birds in Cayenne and Brazil, of which the distinctness is generally admitted (such as *Pteroglossus aracari* and *Wiedii*, *Caryothraustes cayanensis* and *brasilensis*, and *Piprites chlorion* and *chloris*), which depend upon differences similar to, or perhaps less than, those between *Urogalba paradisea* and *U. amazonum*.

Genus 3. BRACHYGALBA, Bp.

1. *inornata*, Sclater, Synopsis, p. 7. sp. 10. *Brachygalba albiventris*, Bp. Conspl. Vol. Zygodact., nec Cuv.

To the localities add : Quixos in rep. Equat. (Sir W. Jardine), and Angostura on the Orinoco (Mus. Kiliens.).

The female has the belly rufous instead of white. This species is certainly not the *albiventer* of Cuvier, that name having been applied by him to Le Vaillant's figure, Supp. H. (cited by Cuvier, insufficiently perhaps, but not incorrectly, by the number of the page, 46), and consequently a synonym of Vieillot's *leucogastra*, as placed by me in my Synopsis (see Cuvier's Règn. An. (1829) i. p. 448). I had supposed *G. albigularis* of Spix, and not this species, to be the type of *Brachygalba*, Bp., because it stood first in the list. When the creator of a genus gives neither generic characters nor type, the only rule to go by is to take the *first* species given as the type species.

2. BRACHYGALBA MELANOSTERNA, Sclater, sp. nov.

Supra nigricanti-fusca ; subtus nigra ; mento albido : ventre medio albo : alis caudaque ænescentibus : rostro albo.

Hab. Goyaz in imp. Brasiliensi (Behn) ; Guarayos in Bolivia (d'Orb.)?

I observed a specimen of this species in the collection of Professor Behn, at Kiel. It closely resembles the preceding, but has the breast quite black and the bill white. It was brought by the owner from the province of Goyaz, in the interior of Brazil. D'Orbigny's specimen, mentioned in my Synopsis, page 7, probably also belongs to this species.

I have nothing further to say concerning *Jacamaralcyon* and *Jacamerops*. The *Galbuloides Boersi* is probably a fictitious bird. Specimens of *Galbalcyrrhynchus* in the Paris Museum were brought by MM. Castelnau and Deville from Pebas, on the Upper Amazon ; and one of these birds, in the collection of Herr Kalkmann of Hamburg, was procured in the neighbourhood of Pernambuco in Brazil.

Excluding therefore the *Galbuloides*, we have at present no less than twenty species of the family *Galbulidæ*, all inhabiting the tro-

pical portions of South America. One only of these birds is found outside the Isthmus of Panama, and none occur on the western side of the Andean range. Azara includes none among the birds of Paraguay, and two only range so far south as the Brazilian provinces of Rio and S. Paolo. The true home of these birds seems to be the hot, low forests of Guiana and the Amazons, where the number of species attains its greatest development.

GALBULIDARUM TABULA GEOGRAPHICA.

	Veragua.	New Grenada.	Trinidad.	Venezuela.	Guiana.	Lower Amazon.	Rio Negro.	Rio Napo.	Upper Amazon.	East Peru.	Interior Brazil.	N.E. Brazil.	S.E. Brazil.	Bolivia.
GALBULA.														
1. <i>viridis</i>	*	*	?
2. <i>rufoviridis</i>	*	*	*
3. <i>melanogenia</i>	*
4. <i>ruficauda</i>	*	*	*
5. <i>tombacea</i>	*	*
6. <i>fuscicapilla</i>	*
7. <i>albirostris</i>	*	..	*
8. <i>chalcocephala</i>	*
9. <i>cyanicollis</i>	*	*
10. <i>leucogastra</i>	*	..	*
11. <i>chalcothorax</i>	*
UROGALBA.														
12. <i>paradisea</i>	*
13. <i>amazonum</i>	*
BRACHYGALBA.														
14. <i>inornata</i>	*	*
15. <i>melanosterna</i>	*	*
JACAMARALCYON.														
16. <i>tridactyla</i>	*	..
17. <i>lugubris</i>	*
JACAMEROPS.														
18. <i>grandis</i>	*	..	*	..	*	*
19. <i>Isidori</i>	*
GALBALCYRHYNCHUS.														
20. <i>leucotis</i>	*	*	*	?



January 23, 1855.

Dr. Gray, F.R.S., Vice-President, in the Chair.

The following papers were read :—

1. NOTICE OF THE HORNS AND SKULL OF THE ARNEE.
BY DR. J. E. GRAY, F.R.S., P.B.S., V.P.Z.S. ETC.

(Mammalia, Pl. XL.)

Colonel James Matthie has lately presented to the British Museum the skull and horns of an Arnee or Buffalo, killed by him near Fezpoor, Central Assam, on the 8th of April, 1842.

The horns are of a very large size, as proved by the accompanying measurement, being nearly as large as the separate horns without a skull, in the British Museum, which formerly formed part of Sir Hans Sloane's Collections, and were described and figured by him in the *Philosophical Transactions* for 1727, no. 397, p. 222, f. 23. These horns are 78 inches, or 6 feet 6 inches long.

The dimensions of Colonel Matthie's specimen are as follows, according to his measurement.

	ft.	in.
"Length of the skull from occiput to nose	2	4
Length of the horns round the outside of them and across the forehead	12	2
Length of line from tip to tip of the horns	6	8
Circumference of right horn at base	1	8½
" " left horn at base	1	8
Width across the forehead	0	11

"The horns do not exactly correspond in length and shape."

The occipital portion of the skull is very much developed, to give enlarged attachment to the muscles of the neck for the support of the horns.

I may observe, that the Arnee of Anderson, *Bee*, 1792 (the *Bos arne* of Kerr, 'Animal Kingdom,' 336. t. 295, copied into 'Shaw, Zoology, iv. p. 400, t. 210) is only a large horned variety of the common Buffalo, with horns nearly regularly curved from the base. The horns presented by Colonel Matthie, on the other hand, are nearly straight for great part of their length, and only curved at the end. In this respect they agree with the horns in the British Museum, which Mr. Doyle, whose name is "given to a sort of stuffe worn in summer," discovered in a cellar in Wapping, and which he gave to Sir Hans Sloane for his kindness in attending him in sickness. These are described by the latter in the 'Philosophical Transactions' for 1727, no. 397, p. 222. f. 23; and re-described and figured by Colonel Hamilton Smith as those of *Bos Arnee* in *Griffith*, *A. K.* iv. t. 201. f. 2, 3.

Dr. Hook read a lecture on Mr. Doyle's horns at Gresham College, and thought they were probably those of the *Sukotyro* or *Sucotaria*, No. CCLXXXV.—PROCEEDINGS OF THE ZOOLOGICAL SOCIETY.

described by Nieuhoff in his 'Voyages and Travels in the East' as found in Java. He compares the horns to the tusk of the elephant, which they somewhat resemble. Dr. Shaw thought otherwise, and formed a genus for Nieuhoff's animal, making a figure of it from his description (see *General Zool.* 1. 226. t. 65). Illiger considered it more probably a Babyrusa. See Illiger, *Genera Mam.* 100.

2. CHARACTERS OF SIX NEW SPECIES OF THE GENUS THAMNOPHILUS. BY PHILIP LUTLEY SCLATER, M.A.

(Aves, Pl. LXXIX—LXXXII.)

1. THAMNOPHILUS TRANSANDEANUS.

Supra niger; subtus albus; tectricibus alarum superioribus et caudæ inferioribus nigris albo terminatis; cauda nigra rectricibus duabus utrinque extimis macula parva terminali alba.

Long. tota 8·1, alæ 3·7, caudæ 3·2 poll.

Hab. in rep. Equatoriana, Guyaquil. Mus. Brit.

Obs. Similis *Thamnophilo majori*, sed tectricibus subcaudalibus nigris albo terminatis et rectricibus non albo guttatis.

2. THAMNOPHILUS LEUCHAUCHEN. (Pl. LXXIX.)

♂ *Pileo cristato cum lateribus capitis et gutture antico ad medium pectus nigris; nucha, cervice laterali et corpore subtus albis; dorso murino-brunneo; alis caudaque nigris albo limbatis; rectricis una utrinque extimæ pogonio externo medio et omnium apicibus albo maculatis; rostro et pedibus nigris.*

♀ *Crista ferruginea; subtus ochraceus, gutture nigro striato, lateribus capitis et nucha ochraceis nigro mixtis.*

Long. tota 6·4, alæ 2·8, caudæ 2·5.

Hab. in Peruv. Orient., Chamicurros. Mus. P.L.S.

Obs. Affinis *Th. atricapillo*, Vieill., sed rostro minore, lateribus cervicis et corpore subtus albis neque cinereis, dorso clariore brunneo et gutturali nigro non in ventrem producto distinguendus.

3. THAMNOPHILUS ALBINUCHALIS.

♂ *Supra murino-brunneus; nucha late alba; dorsi medii pennis albo mixtis; capite summo cristato nigro; alis fuscis, tectricibus albo limbatis; cauda nigra, rectricum omnium apicibus et una utrinque extimæ margine externo albo maculatis; subtus albus; gutture et pectore antico nigris; capitis lateribus albo mixtis.*

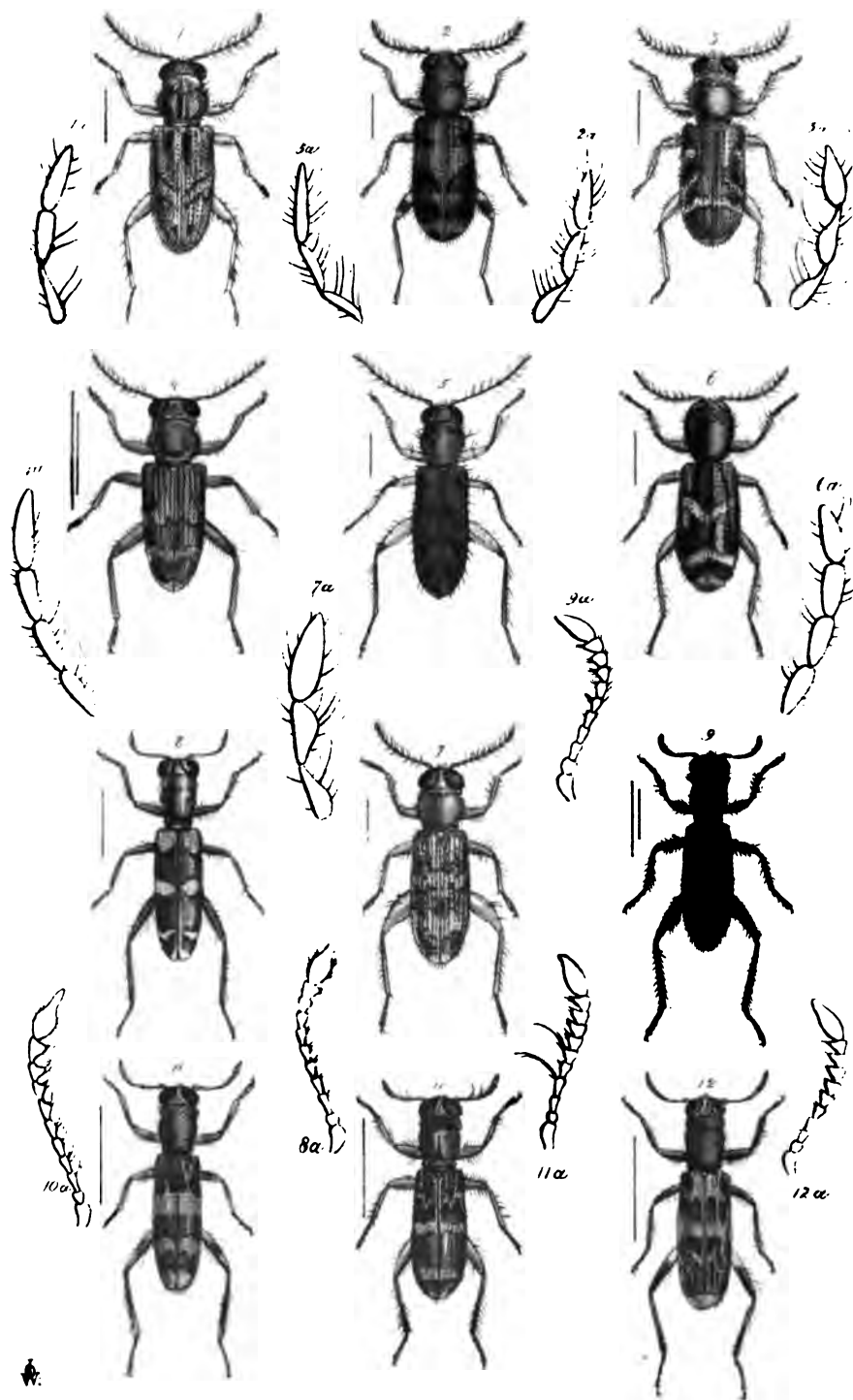
♀ *Supra brunnescentior, capite et cauda tota rufo-ferrugineis; nucha et corpore infra ochraceis.*

Long. tota 6·5, alæ 3·2, caudæ 2·5.

Hab. in rep. Equatoriana, Guyaquil et insula Puna. Mus. Brit.

Obs. Species a *Thamnophilo atricapillo* nucha alba et colore corporis inferi albo nee schistaceo, a *Thamnophilo leuchauchene* dorso albo mixto, crassitie majore, et nucha candidiore distinguenda.





1. *Stigmatium ignavum*.
 2. *Stigmatium torulatum*.
 3. *Stigmatium fervidum*.
 4. *Stigmatium granulosum*.
 5. *Stigmatium ambulator*.

6. *Stigmatium cursor*.
 7. *Onadus stenostomoides*.
 8. *Onadus fascipes*.
 9. *Onadus vigilans*.
 10. *Onadus seticornis*.
 11. *Onadus seticornis*.
 12. *Onadus seticornis*.

4. *THAMNOPHILUS MELANONOTUS*. (Pl. LXXX.)

Niger; interscapularibus albo mixtis; dorso postico cinereo; abdomine cinerascanti-albo; alis nigris albo marginatis; cauda nigra, rectricibus omnibus apice et extrema utrinque laterali etiam pogonio externo medio albo maculatis; rostro et pedibus nigris.

Long. tota 6·5, alæ 3·0, caudæ 2·5.

Hab. in Nova Grenada, Santa Martha. Mus. P.L.S.

Obs. Affinis *Thamnophilo atricapillo*, sed dorso nigro.

5. *THAMNOPHILUS NIGROCINEREUS*. (Pl. LXXXI.)

♂ *Cinereus, capite toto cum dorso summo et gutture nigris; interscapularibus basi albis; alis caudaque nigricantibus, albo limbatis; rectrice una utrinque extrema media albo notata; rostro et pedibus nigris.*

♀ *Rufo-brunnea; gula et ventre medio albescentioribus; alarum tectricibus secundariisque et cauda sicut in mari albo notatis.*

Long. tota 5·75, alæ 3·8, caudæ 2·4.

Hab. in Brasilia boreali, Para. Mus. Brit. et P.L.S.

Obs. Similis *Th.* *nævio* sed multo major; rostro fortiore et gutture nigro.

6. *THAMNOPHILUS CÆSIUS*. (Pl. LXXXII.)

Lanius cæsius, Cuv. in Mus. Paris.

♂ *Nigro-plumbeus; pileo cristato gulaque nigris; tectricibus alaribus anguste albo limbatis; cauda nigricante unicolore; rostro pedibusque nigris.*

♀ *Grisescanti-brunnea, crista nigricante; capitis lateribus, tectricum alarum marginibus et corpore subtus rufis; rostro nigro, mandibula inferiore basi et pedibus pallidis.*

Long. tota 5·5, alæ 3·25, caudæ 2·25.

Hab. in Guiana Britannica. Mus. Parisiensi et P.L.S.

February 13, 1855.

John Gould, Esq., F.R.S., in the Chair.

The following paper was read:—

DESCRIPTIONS OF SOME NEW SPECIES OF CLERIDÆ,
COLLECTED AT SINGAPORE BY MR. WALLACE.
BY J. O. WESTWOOD, F.L.S. ETC.

(Annulosa, Pl. XXXVIII.)

Having lately submitted to the notice of the Zoological Society a memoir containing descriptions of fifty new species of *Cleridæ*, na-

tives of Asia, Africa and Australia, selected from the cabinets of our most zealous collectors of exotic Coleoptera, I could have had but little hope of being able in a few months' time to record the existence of a number of additional species of the same family, from one of the same quarters of the globe. Nevertheless, the indefatigable exertions of Mr. Wallace, who has recently started on a natural-history excursion to Singapore and the islands of the Eastern Archipelago, have enabled me to give a supplement, containing not fewer than twelve new species, to my former memoir, all of which were collected by that gentleman within a few days after his arrival at Singapore; proving how rich must be the harvest which he is likely to reap, should his health be spared, in that and the adjoining countries. The species of *Cleridæ* which he has sent home furnish us with a clue to several important points connected with the geographical distribution of the family in question, belonging as they do exclusively to two genera, *Omadius* and *Stigmatium*, which are thus proved to have their metropolis in that quarter of the world. It is true that the species now about to be described do not possess the splendour of many of the Brazilian, or even European species of the family, their specific distinctions consisting of variations in the markings of the elytra, which it is almost impossible to describe in words, and which can only be satisfactorily represented by careful figures. Some variation in form also occurs in several of the species, and I have also observed variations in the structure of the antennæ in most of the species beyond what might be regarded as sexual. One of the species of *Omadius* is especially distinguished in this respect, from having several of the central joints of the antennæ furnished with long curved setæ, such as I have not elsewhere observed.

Mr. Wallace has not at present supplied any notices of the habits of the species received by his agent in this, his first consignment; but as all the specimens are specifically numbered, I have no doubt that he possesses notes concerning them with which I hope to be favoured before this article goes to press.

From the specimen now given an idea may be obtained of the richness of the collection which Mr. Wallace has already formed. I may allude, however, to the families *Carabidæ* and *Anthribidæ*, which contain many new and remarkable forms, especially among the smaller species. We may therefore trust, that when he reaches Borneo and the adjacent islands, we shall receive from thence many very interesting novelties.

Genus STIGMATIUM, G. R. Gray.

1. STIGMATIUM IGNAVUM. (Pl. XXXVIII. fig. 1).

Piceo-ferrugineum, punctatum, undique luteo-griseo sericeum, setisque longioribus sparsis vestitum, antennis gracillimis, elytris punctato-striatis, litera V lutescenti, paullo pone medium disci notatis, pedibus flavidis, femoribus ante apicem tibiisque pone medium obscure fasciatis.

Long. corp. lin. 3½.

Hab. apud Singapore.

Caput cum oculis latitudine pronoti, nitidum, tenuissime punctatum, sericeum, mandibulis magnis, uncinatis, piceis, nitidis, intus dente forti medio armatis. Palpi pallide lutescentes, maxillares versus apicem magis brunnei. Antennæ gracillimæ longe setosæ, fuscæ, basi lutescentes, articulis 4-9 elongatis, e basi ad apicem sensim attenuatis, duobus ultimis latioribus, 10 apice subtruncato. Prothorax lateribus rotundatis, pone medium latior, disco in medio subcarinato, carina magis castanea, tenuissime punctatus, sericeus et setosus, ante apicem constrictus. Elytra ad basin prothorace multo latiora, e medio ad apicem sensim attenuata, singulo ad basin convexo, punctato-striata, luteo-sericea parum nebulosa, paullo pone medium fascia angulata lutescenti (literam V referente) maculaque angulata subapicali obscura notata. Corpus infra piceum setosum, abdomine rufo, segmentis abdominis flavido marginatis. Pedes cum coxis 4 anticis luteo-albidi, femoribus posticis crassioribus, omnibus ante apicem obscurius fasciatis tibiisque basi et pone medium obscurioribus; tarsi brunnei; oviductus fœminæ exsertus gracilis, abdomine longior.

2. STIGMATIUM TORULENTUM. (Pl. XXXVIII. fig. 2).

Ferrugineum nitidum sericeum, antennis gracilibus nigris, elytris punctato-striatis, macula obliqua subhumerali, fascia obliqua submedia (ad suturam interrupta), maculis duabus magnis pone medium apicibusque nigris, coxis femoribusque albidis, his apice piceis, tibiis tarsisque castaneis.

Long. corp. lin. 3.

Hab. apud Singapore.

Caput latitudine prothoracis, obscure ferrugineum nitidum, sericeum; mandibulæ nigræ acutæ; palpi lutescentes, maxillares apice castanei; antennæ graciles nigræ articulis duobus basalibus pallidis, articulis elongatis compressis 4-9 versus basin latioribus, ad apicem sensim attenuatis, duobus ultimis latioribus elongato-ovalibus. Prothorax convexus lateribus rotundatis, paullo pone medium latior, antice et prope basin constrictus. Elytra elongata, e basi ad medium lateribus fere parallelis, hinc ad apicem rotundato-attenuatis, ferruginea nitida aureo-sericea striato-punctata, singulo macula marginali subhumerali, altera magna triangulari submedia in fasciam angulatam, ad suturam interruptam intus extensa, tertia magna inter medium et apicem, apiceque ipso nigris.

Corpus infra rufo-piceum, subsericeum, abdomen aurantiacum. Coxæ quatuor antice cum omnibus femoribus albidis, horum apicibus piceis; tibiæ et tarsi castanei.

3. STIGMATIUM FERVIDUM. (Pl. XXXVIII. fig. 3).

Piceo-castaneum, luteo-sericeum, albidoque setosum, antennis gracilibus pallidis, apicibus paullo obscurioribus; elytris striato-punctatis obscurioribus, guttis nonnullis sericantibus inter basin et medium, fascia subrecta transversa pone medium apicibusque sericeis, pedibus luteo-testaceis femoribus basi pallidioribus.

Long. corp. lin. 3-3½.

Hab. apud Singapore.

Caput latitudinē prothoracis, tenuissime punctatum, facie et orbitu oculorum dense albido setosis; mandibulæ castaneæ apice nigræ; palpi lutescentes, antennæ graciles pallide fulvescentes, articulis apicalibus paullo obscurioribus, articulis 4–10 basi ovalibus, ad apicem valde attenuatis, 11mo ovali apice subacuto. Prothorax convexus sericeus tenuissime punctatus nitidus, lateribus pallidioribus et dense albido-setosis. Elytra elongata, subparallela, postice rotundata, striato-punctata, sericea, piceo-castanea, lateribus ante medium paullo obscurioribus, inter basin et medium guttis variis irregularibus fasciæque subundata pone medium apiceque sericantibus. Corpus infra castaneum punctatissimum; abdomen aurantio-rufum. Pedes pallide castaneo-fulvi, coxis 4 anticis et femoribus omnibus pallide flavescentibus.

4. STIGMATIUM GRANULOSUM. (Pl. XXXVIII. fig. 4).

Piceum aureo-sericeum; capite pronoto et parte postica elytrorum æneis nitidis, elytris dimidio basali punctato-striatis, spatiis inter puncta granulosis, punctis striarum in parte postica fere oblitteratis; maculis, fascia undata pone medium apiceque aureo-sericeis; pedibus rufis, femoribus posticis apice tarsisque nigris.

Long. corp. lin. $5\frac{1}{4}$ – $7\frac{3}{4}$.

Hab. apud Singapore.

Caput prothoracis latitudine, oculis magnis, æneum nitidum, vertice et hypostomate longe aureo setosis. Antennæ nigræ, articulis duobus basalibus rufis, 3–10 compressis oblongis, e basi fere ad apicem sensim latioribus, apicali elongato-ovato apice subacuto. Mandibulæ nigræ; palpi obscure lutei, maxillares articulo ultimo piceo. Prothorax æneus nitidus tenuissime punctatus aureo-villosus, lateribus rotundatis, medio latior, antice et postice constrictus. Elytra lata, singulo ad basin parum convexo; sutura depressa, dimidio basali rugosa, scil. profunde punctato-striata; spatiis inter puncta granulosis; dimidio apicali multo læviori, macula subquadrata sub-scutellari, guttis nonnullis ante medium (suturali majore communi); fascia irregulari quasi e guttis tribus angulatis conjunctis formata apiceque aureo villosis. Metasternum rufum. Pedes cum coxis omnibus rufi, apice femorum posticorum tibiisque fuscis. Abdomen cyaneum, segmenti basalis parte antica media attenuata rufa.

Obs. Individua majora segmentum penultimum abdominis habent emarginatum et articulos antennarum paullo latiores.

Var. Minor et obscurior absque tinctura ænea, antennisque paullo latioribus.

5. STIGMATIUM CYLINDRINUM. (Pl. XXXVIII. fig. 6).

Nigrum nitidum prothorace truncato-ovali luteo villosa, elytrorum humeris fulvis, fascia tenui angulata ante medium, altera transversa pone medium apiceque albis; abdomine nigro, segmento basali coxisque omnibus luteis.

Long. corp. lin. $3\frac{1}{4}$.

Hab. apud Singapore.

Gracile, subcylindricum, nitidum, sublæve; capite et prothorace griseo-sericeis. Caput cum mandibulis parvis nigris, tenuissime punctatum; antennæ nigrae articulo basali piceo, 3-10 compressis subovatis; basi parum attenuatis, 11mo ovali apice attenuato; palpi pallide lutei; prothorax truncato-ovalis; antice latior, valde convexus; versus apicem transverse subcanaliculatus; canali transversa etiam basi proxima griseo-setosus. Elytra elongata subcylindrica nigra nitida, dimidio basali punctato-striata, apicali lævi, humeris vittaque longitudinali fulvis, fascia tenui obliqua ante medium, altera transversa pone medium apiceque albo-sericeis. Thorax infra castaneus; abdominis segmentum basale cum coxis omnibus luteum; segmenta reliqua nigra nitida; oviductus feminae abdomine longior lutescens. Pedes castanei femoribus basi pallidis, 4 posticis apice obscurioribus; tarsis nigris.

6. STIGMATIUM AMBULATOR. (Pl. XXXVIII. fig. 5).

Capite et prothorace castaneis nitidis, aureo-sericeis longe setosis, antennis gracillimis, articulis tenuibus; elytris fuscis subaeneo-villosis nebulosis; pedibus elongatis gracilibus, femoribus posticis elongato-clavatis.

Long. corp. lin. 3.

Hab. apud Singapore.

Caput castaneum, hypostomate piceo, aureo-villosum, setisque longis vestitum; mandibulae nigrae; antennæ fuscæ articulis basalibus pallidis, tenuissimæ, articulis fere filiformibus et compressis, ultimo elongato attenuato; oculi magni. Palpi albi. Prothorax castaneus aureo-sericeus setisque longis vestitus, lateribus rotundatis, in medio latior antice et postice vix transversim impressus. Elytra elongata, fusca sericie tenui subaenea subnebulosa setisque longis vestita, dimidio basali lateribus parallelis, apicali sensim attenuatis; punctato-striata; striis ante apicem oblitteratis. Corpus infra castaneum. Pedes præsertim postici elongati graciles, setis longis instructi, femoribus cum coxis 4 anticis albidis apicibus piceis; posticis elongato-clavatis; tibiis 4 anticis castaneo-piceis apice lutescentibus; tibiis 2 posticis cum tarsis omnibus castaneis.

7. STIGMATIUM CURSOR. (Pl. XXXVIII. fig. 7).

Fusco-luteum, elytris albido nebulosis; oculis maximis, pedibus longe setosis, femoribus duobus posticis valde incrassatis; antennis gracilibus, articulo 10 elongato-triangulari, ultimo elongato ovato.

Long. corp. fere lin. 3.

Hab. apud Singapore.

S. ambulatori brevior femoribusque posticis multo crassioribus. Caput fuscum antice nigrum, luteo setosum, oculis maximis, antice spatio valde angusto inter se separatis, labro fulvo. Palpi lutei; antennæ fuscæ articulo basali fulvo; longe setosæ, articulis 3-9 versus basin latioribus apice acuminatis, 10mo elongato-trigono, 11mo elongato-ovato. Prothorax piceo-brunneus punctatissimus, capite

vix latior, luteo setosus, versus apicem et basin transversim impressus, lateribus rotundatis, ante medium paullo latior. Elytra oblonga subparallela, profunde punctato-striata, fusco-lutea, nitida, sericie albida nebulosis, nebulis fasciam valde irregularem maculosam ante medium alteraque latiori pone medium formantibus apicibusque albidis. Pedes brunnei, albido-sericei, setisque longis nigris instructi, femoribus duobus posticis compressis dilatatis margine postico in medio nigro. Corpus cum abdomine nigrum.

Genus OMADIUS, Laporte.

8. OMADIUS CTENOSTOMOIDES. (Pl. XXXVIII. fig. 8).

Niger subcylindricus nitidus, prothorace subaeneo, elytris guttis 6 brunneo-albidis suturaque luteo-sericeis, antennis gracilibus, articulis 9 et 10 sensim latioribus, 11 brunneo apice luteo, utrinque e medio ad apicem attenuato.

Long. corp. lin. 4-4½.

Hab. apud Singapore.

Caput piceum luteo-setosum; oculis magnis; prothorace latius, clypeus transversus niger, labrum fulvum bilobatum. Maxillæ labium et palpi pallide lutei, horum articulo ultimo piceo. Antennæ piceæ, articulo basali brunneo, 9no præcedenti vix latiori, 10mo triangulari latiori, 11mo lato ovato brunneo, e medio ad apicem utrinque attenuato, dimidio apicali lutescenti-setoso. Prothorax subaeneus nitidus, lævis, elongatus, subcylindricus, capite angustior, versus apicem et basin transversim, utrinque etiam in medio oblique, impressus. Elytra elongata, subcylindrica, capite paullo latiora, e basi ad medium punctato-striata; subnitida, nigro setosa, nigra, humeris piceis, singulo humero late, macula subrotunda media, alteraque undulata subapicali brunneo-albidis sericeis, suturaque luteo-sericea. Pedes nigri, nigro setosi, trochanteribus 4 anticis fulvis, tarsis castaneis. Corpus infra nigrum, abdomine fulvo.

9. OMADIUS FASCIIPES. (Pl. XXXVIII. fig. 9).

Piceus aureo-sericeus, fascia denudata castanea ante medium, altera latiori irregulari pone medium, tertiaque subapicali, omnibus sutura anguste sericea divisis; pedibus fulvis, femoribus tibiisque in medio late nigris.

Long. corp. lin. 3½-5.

Hab. apud Singapore.

O. Kameliano, White (Cat. Cler. Brit. Mus.) magnitudine et statura æqualis, antennis autem nigris fasciisque elytrorum distinctus. Caput piceum aureo-setosum, facie infra oculos lutea, clypei apice piceo; labro luteo; mandibulæ nigræ, palpi pallidi, articulo ultimo apice obscuriore; antennæ piceæ, articulis duobus basalibus luteis, 7, 8, 9 et 10 sensim latioribus subtrigonis; ultimo magno compresso ovali. Prothorax oblongus, e capite ad basin elytrorum sensim angustatus, piceus, sub lente punctatissimus, antice transversim striolatus, aureo-sericans, versus caput et basin (hic curvatim) transverse

impressus; elytra capite latiora depressa, in medio latiora, castaneo-picea, striato-punctata; striis fere ad apicem extensis, at pone medium minus distinctis; aureo-sericea, fascia irregulari paullo ante medium, altera latiori paullo pone medium, (lobum semirotondum postice in singulo elytro emittente,) maculisque duabus subquadratis subapicalibus denudatis; pedes fulvi, femoribus tibiisque in medio late nigris, nigredine autem in femoribus 4 anticis infra interrupta. Corpus infra piceum, abdomine fulvo.

O. modestus, Klüg. Mon. Cler. pl. 1. f. 2, proximus; differre videtur, autem forma fasciarum elytrorum.

10. OMADIUS VIGILANS. (Pl. XXXVIII. fig. 10).

Nigro-piceus nitidus, aureo sericeus, elytris castaneis sericeis, fascia ante medium (e maculis oblongis formata) altera latiori pone medium tertiaque subapicali denudatis, pedibus fulvis nigro variegatis.

Long. corp. lin. 6½.

Hab. apud Singapore.

O. bifasciato, Lap. proximus.

Caput piceum aureo-sericeum, oculi magni nigri, prothorace evidenter latiores, labrum pallidum; palpi lutei apice articuli ultimi obscuriori; mandibulae nigrae, antennae piceae articulo basali et dimidio 2di fulvis; 7-10 trigonis sensim latioribus, magis laxis, 11mo basi lato, e medio ad apicem utrinque attenuato; prothorax subcylindricus, versus marginem anticum et basin transversim impressus, impressione postica curvata; elytra castanea, aureo-sericea, humeris, fascia ante medium e maculis oblongis quasi formata, altera latiori paullo pone medium, antice fere recta, postice vero in medio singuli elytri emarginata, 3tia lata curvata in medio sutura sericea divisa, denudatis et colore obscurioribus; striato-punctata, punctis in dimidio basali elytrorum majoribus. Pedes fulvi femoribus in medio fascia nigra notatis, in 4 anticis subtus interruptis, tibiis omnibus e basi ultra medium nigris tarsorumque articulis basalibus piceis, coxis et trochanteribus 4 anticis fulvis, 2 posticis piceis. Corpus infra piceum, metasterno rufo bimaculato; abdomen rufo-fulvum.

11. OMADIUS SETICORNIS. (Pl. XXXVIII. fig. 11).

Piceus aureo-sericeus prothorace oculis latiori, antennis in medio longe setigeris; elytris basi, fascia angusta media, altera subapicali apiceque flavidis, ad basin granulato-striatis; pedibus rufo-castaneis, tarsis nigris.

Long. corp. lin. 6½.

Hab. apud Singapore.

Præcedentibus crassior: caput piceum aureo-sericeum, clypeo labroque pallidis; mandibulae nigrae; palpi lutei, apice articuli ultimi obscuriore; antennae nigrae, articulo basali fulvo, 4 et 6 setas longas curvatas emittentibus, 6-10 sensim majoribus obconicis, ultimo ovali compresso, apice extremo subattenuato; prothorax oblongus, antice

capite paullo latior, postice sensim attenuatus, versus marginem anticum et basin transverse impressus, parte antica transverse striolata; medio disci linea tenuissima lævi elevata; elytra elongata, subdepressa in medio latiora: punctato-striata, punctis minutis; interstitiis inter puncta ad basin elytrorum in tubercula parva (in lineas 4 singuli elytri) elevatis; picea, basi anguste pallidiori, fascia tenui valde irregulari inter basin et medium, altera undulata media, tertia latiori subapicali apiceque ipso aureo-sericeis; pedes castanei, tarsis omnibus, apiceque tibiæ 2 posticarum nigris; corpus infra piceum, metasterno late castaneo, abdomine basi luteo.

12. OMADIUS CLYTIFORMIS. (Pl. XXXVIII. fig. 12).

Elongatus subcylindricus obscure piceus aureo subsericeus; capite postice, apice elytrorum, femoribus basi et infra flavis; elytris sericie aurea reticulatis.

Long. corp. lin. 7.

Hab. apud Singapore.

Præcedentibus longior et subcylindricus. Caput cum oculis prothorace latitudine fere æquale, oculi magni fere contigui; occipite pilis flavis dense obsito, facie griseo-setosa; palpi pallide lutescentes, apice fusi. Mandibulæ nigræ; antennæ nigræ; articulis 3–10 sensim majoribus triangularibus, 11mo magno compresso e basi ad apicem sensim angustato parum curvato, apice rotundo; prothorax subcylindricus, parallelus, antice et postice linea transversa impressus, supra sub lente tenuissime transversim striolatus, subsericeus, sericie aurea densiore versus angulos anticos: elytra elongata, subcylindrica, picea, opaca, puncto parvo pallido basali intra humeros apiceque pallido fulvo-sericeo, disco, præsertim pone medium, lineis tenuibus sericeis reticulata. Corpus infra nigrum, griseo-setosum; pedes 4 antici coxis albidis, trochanteribus piceis, femoribus infra pallide flavis, supra cum tibiis et tarsis piceo-nigris; pedes 2 postici cum coxis et trochanteribus nigro-piceis, femoribus basi pallide flavis.

February 27, 1855.

Dr. Gray, F.R.S., Vice-President, in the Chair.

The Chairman communicated the following extract from a letter he had received from Francis Brent, Esq. of Folkestone:—"The fishermen bring into Sandgate, Kent, hundreds of immense Conger Eels, which they pick up at sea, off Dungeness. Most of them are dead, but some only nearly so. The frost appears to have destroyed them. Some of them are very large indeed. On Thursday last (the 22nd of February 1855), several *tons* were brought in by the boats, and sent off to the London markets." By the papers it

1



2



1 *Pterocles exustus*.

2 *Pterocles quadricinctus*

appears, that the Red Mullet and other fish were found dead about the same time in Southampton Waters.

The following paper was read :—

1. NOTES ON THE HABITS OF SOME INDIAN BIRDS. PART VII.
BY LIEUT. BURGESS.

(Aves, Pl. LXXVIII.)

Subfamily PROMEROPIDÆ.

Genus UPUPA.

UPUPA EPOPS. HOOPOE.

In the upper portion of the Deccan the Hoopoe is a common bird, frequenting gardens and woody spots, and is very partial to sandy plots of ground, particularly outside the walls of villages. In such places the sand is perforated with the conical holes of the ant-lion, and that this is the food sought for by the Hoopoe in these spots, I discovered on opening the gizzard of one, which was of a very soft texture, and contained one large grub and two or three ant-lions. The Hoopoe breeds in the months of April and May, building its nest in holes in the mud walls which surround towns and villages in the Deccan. I transcribe a note taken on 7th May 1850 on the subject :—"To-day a man brought me word that about fifteen or twenty days ago he found a pair of Hoopoes breeding in a hole in the walls of a town; the nest contained two young birds; it was composed of grass, hemp, and feathers. The same man tells me that he has discovered another pair building." The head man of the town of Jintee brought me an egg of the Hoopoe, which has unfortunately been broken. It was of a very pale blue, or rather skim-milk colour. He found a nest in a hole in a fort wall; it was made soft with a few pieces of hemp, and contained three eggs.

Tribe FISSIROSTRES.

Family MEROPIDÆ.

Genus MEROPS.

MEROPS INDICUS. COMMON INDIAN BEE-EATER.

A common bird in the Deccan, but remarkable for its brilliant plumage, and active fly-catching habits. It chooses for its perch the outside twig of a tree, whence it makes its forage amongst the insect tribes that are brought out by the morning beams. The Bee-eater breeds during the months of April and May, laying its eggs in holes in banks. On the 13th May 1850, I found a pair of these birds breeding in a hole in a bank; the hole was more than an arm's length in depth. At the bottom of it I found three young birds, one very small, with scarcely any feathers on it; another somewhat larger, and the third of considerable size and pretty well fledged. There was no nest.

That birds of this genus migrate, I had a convincing proof when returning to England in 1852. When about half way between Bombay and Aden, on the evening of either the 8th or 9th May, a large flock of Bee-eaters was observed fluttering about the ship, some three or four of which were caught after dusk, when they had settled on the ropes and shrouds. I obtained three or four for the purpose of preserving their skins, but in the confusion occasioned by a shower they were unfortunately thrown overboard. They were larger than *Merops indicus*.

Family HALCYONIDÆ.

Genus HALCYON.

HALCYON SMYRNENSIS.

This and the black and white Kingfishers are the most common of their tribe in the Deccan, frequenting almost every stream and nullah. The former breeds during the month of May in holes in the banks of rivers, laying as many as seven eggs. They are of a beautiful pinky tinge, owing to the colour of the yolk showing through the thin delicate shell. The egg is about the size of that of the little Indian Owl (*Noctua indica*).

Family CAPRIMULGIDÆ.

Genus CAPRIMULGUS.

Of the eggs of these birds, of which there appear to be several varieties in India, I merely subjoin a note made by Mr. Jerdon from Mr. Elliott's notes. He states, that he once found the eggs of the common species, two in number, placed on the ground without any nest. They were pink, spotted with brown.

Family HIRUNDINIDÆ.

Genus CYPSELUS.

CYPSELUS AFFINIS. WHITE-RUMPED SWIFT*.

I should certainly say that this is a common bird in the Deccan, about the city of Ahmednuggur. I have seen their nests crowded together under the roofs of old buildings, choultries and temples, and obtained the nest and eggs from a rock in the range of hills about twelve miles from Ahmednuggur, on the road to Aurungabad. This nest was obtained on 21st September 1849. It was built of mud and lined with grass, and contained two white eggs. The eggs are considerably elongated in form.

CYPSELUS PALMARUM, Hardw. BALASIAN SWIFT.

This Swift, according to General Hardwicke, builds its nest on the

* This Swift builds twice during the year; I obtained a nest and eggs in September, and also found a nest with young birds in April.

leaf of the palm. Dr. Jerdon says that it "is common in all the districts of India, except on the bare table-land." I have, however, never met with its nest or eggs.

Genus *HIRUNDO*.

HIRUNDO FILIFERA, Stephens.

This very handsome Swallow breeds in old temples and under projecting stones in wells and banks of streams. On 28th January 1850, I found the nest of this species built in an old well under a large stone, near the water; the nest was not domed, but open, and the young ones, three in number, exposed to view. On 1st April 1851, I took an egg out of a nest of this Swallow; the nest contained three. The old birds began building about 15th March; the nest was composed of mud, lined with a few fibrous roots and feathers; it was built under a stone in the bank of a stream. The egg is $\frac{1}{10}$ ths of an inch in length, by rather more than $\frac{1}{10}$ ths in width; white, spotted with two shades of red-brown, the spots forming a broken belt round the larger end.

Order *RASORES*.

Family *PAVONIDÆ*.

Genus *PAVO*.

PAVO CRISTATUS. COMMON PEAFOWL.

Peafowl abound in the jungles clothing the slopes of the Ghauts, and in some wooded districts in the interior. In the Deccan, in the wooded hilly portions of the districts of Jamkhair and Scogao they were plentiful, and a remarkably pretty sight it was to see them stalking about near the grain stacks, or running along the bushy banks of the nullahs. They are wary birds, and lead the sportsman a good chase when once they take to the low spurs of the hills, up which they run with incredible swiftness. The best plan to secure them is to wait for their roosting time, under the trees to which they resort. Thick mango trees appear to be their favourite resting-places. Peafowl breed at the end of the monsoon, in the months of September and October, laying, I am told, from three to five eggs, of a buffy white colour, 2 inches and nearly $\frac{1}{8}$ ths in length, by 2 inches and nearly $\frac{1}{10}$ th in width. The nest is said to be composed of grass, and formed on the ground amongst bushes.

Genus *GALLUS*, Briss.

GALLUS SONNERATII, Temm.

As I have not been fortunate enough to obtain the eggs of this jungle fowl, I have again recourse to my friend Dr. Jerdon's notes. He says, "I once found the eggs of this fowl, seven in number, on

the ground in dense jungle at the foot of the Neilgherries. They were of a light pinkish-cream colour."

Family TETRAONIDÆ.

Genus TETRAO.

Subgenus PTEROCLES.

PTEROCLES EXUSTUS. COMMON WHISTLING GROUSE.

This Grouse is common in the open plains of the Deccan, flying in flocks, and, as Colonel Sykes has remarked, announces its approach by its peculiar and piercing cry. I believe that this Grouse breeds during the greater part of the year. Eggs of this species (I believe) have been brought to me from the month of December to May. The Common Whistling Grouse lays three eggs in a slight hollow on the bare ground, and the colour of the eggs so much assimilates with that of the sandy ground on which they are laid, that it is very difficult to find them. The egg sent (Pl. LXXVIII.) is, I believe, the egg of this species. It measures $1\frac{6}{10}$ ths of an inch in length, and 1 inch and rather more than $\frac{1}{10}$ th in width, and is of a stone colour, thickly spotted and blotched with grey and olive-brown. I have in my collection several eggs of the Sand Grouse, which vary much in their size and markings.

PTEROCLES QUADRICINCTUS. PAINTED WHISTLING GROUSE.

This handsome Grouse frequents the low stony hills so common in the Deccan. It is not nearly so common as the last mentioned. I succeeded in getting two or three pairs, by waiting for them at a piece of water whither they used to come at dusk to drink. This Grouse most probably breeds at the same time and lays the same number of eggs as *P. exustus*. Many eggs of birds of the subgenus *Pterocles* were brought to me by the people in the districts, but as they are not generally very accurate observers, and call both *P. exustus* and *P. quadricinctus* by one common name, they could not tell me to which they belonged; but from my own observations, and the notes of Dr. Jerdon, I believe the egg sent with this paper is that of *P. quadricinctus*. Dr. Jerdon says, "I have lately got the eggs of this species, also very similar to the other, but rather smaller, and with the spots fewer and larger."

Genus PERDIX.

PERDIX PICTA.

I met with the Painted Partridge in the grassy valleys near and amongst the Western Ghats near Nassick, in the thickly planted and rich gardens, and in one of the districts between the Godavery and the Bheema rivers. In the latter district the Shikaries brought me several pairs alive. Its very peculiar cry is heard at a considerable distance. When out shooting in a valley amongst the Ghats, I saw one calling when perched on the low stump of a tree. Dr.

Jerdon says, "It breeds during the monsoon, lays six or seven eggs of a smoky bluish-white colour, of an oval form, much depressed at the thick end."

Subgenus FRANCOLINUS.

FRANCOLINUS PONTICERIANUS. COMMON PARTRIDGE of India.

This Partridge is found amongst bushes and underwood, but is particularly fond of thick grassy hedges round garden plantations. It is found either singly or in pairs. The Grey Partridge breeds during the months of February and March, laying its eggs, seven in number, in grassy spots, hedgerows, and amongst bushes. The egg is of a rich stone colour, 1 inch and $\frac{1}{6}$ ths in length, by 1 inch and $\frac{1}{6}$ th in width, but they vary considerably in colour and size. This Partridge is by no means a shy bird, but, on the contrary, appears to prefer fields and gardens near towns and villages to less frequented spots. By some it is called the Scavenger Partridge, but I believe there are no grounds for such a term being applied to it; its flesh is very fair eating. The crop of one which I shot was full of bajocce and small seeds.

FRANCOLINUS SPADICEUS. SPUR-FOWL.

I procured a specimen of the Spur-fowl on the Ghauts at Khaddalla. It was flushed in a garden, and betook itself to a tree in which I shot it. Its gizzard contained a quantity of earth, some small stones, and small brown seeds. I was informed by a Shikarie that they breed in the months of February and March in thick jungles, making their nests on the ground or in thick close bushes, and laying three white eggs.

Subgenus COTURNIX.

I herewith forward an egg, in itself a bad specimen, but the only one I was able to procure, and which I believe to belong either to *C. dactylisonans*, the large grey Quail, or to *C. textilis* (Temm.). I believe the egg to be that of the latter, as if *C. dactylisonans* be identical with the English Quail, the egg should be of a yellowish or dull orange-coloured white, blotched or speckled with umber-brown, whereas the egg now sent is of uniform buff, merely spotted and discoloured by a long exposure to wet.

COTURNIX ARGOONDAH (Sykes). ROCK QUAIL.

This pretty little Quail, as its name implies, is an inhabitant of stony hills and bushy sides of streams and nullahs. It lives in bevs, and is to be met with in company with the grey and black-breasted Quail. The Rock Quail breeds generally during the months of November and December, but I have had its eggs brought to me as late as March, and have procured a young bird well fledged as early as 20th November. It does not, I believe, lay more than four eggs, as on three different occasions I have had that number brought to me, and on a fourth, four young ones just fledged were brought

to me when out quail-shooting. The young were covered with down, and had the appearance of being powdered. The egg of this Quail is of a pale buff colour, 1 inch and $\frac{1}{16}$ th in length, by $\frac{1}{16}$ ths of an inch in width.

I take this opportunity of bringing to the notice of the members of this Society distinguishing marks between the Rock Quail and the Grey and Black-breasted Quail, and of proposing that the former species should not be confounded with the two last. The distinguishing marks of the former, the Rock Quail, are the stoutness and depth of the beak in proportion to its length, the much more rounded form of the wing, the secondaries and tertials being much more equal in size with the primaries than those of the Grey and Rain Quail; the much more defined scaly protection of the legs and feet in the Rock Quail, and what I believe the most distinguishing mark, the smaller number of eggs laid by the Rock Quail. I believe that the Grey and Rain, or Black-breasted Quail, lay *eight or nine eggs*, the Rock Quail not more than *four*.

March 13, 1855.

Dr. Gray, F.R.S., Vice-President, in the Chair.

The following papers were read:—

1. NOTES ON THE HABITS OF SOME INDIAN BIRDS. PART VIII.
By LIEUT. BURGESS.

Family STRUTHIONIDÆ.

Genus OTIS.

OTIS NIGRICEPS (Vigors). BLACK-HEADED BUSTARD.

This fine Bustard is found in flocks, varying in size, in the open plains of the Deccan, preferring the dry grassy and stony grounds to others. It grows to a large size; one fine male which I measured was 7 feet across the wings, and 46 inches from the tip of the beak to the end of the tail. This Bustard may almost be said to breed all the year round. I have had an egg brought to me in February, another on the 4th May, containing a young bird. A gentleman on the Revenue Survey told me that he had seen a young Bustard, covered with down, in the early part of October. I have had a young bird brought to me late in November, as well as eggs in November and December. The female generally lays but one egg. A. F. Davidson, Esq., Superintendent of the Ahmednuggur Revenue Survey, told me a curious habit of the male Bustard. He says, "About breeding time the male is fond of mounting some elevated spot, and then strutting about with the tail erected and spread, the wings drooping,

and the pouch in the throat inflated with air, and looking like a large bladder; under the hillock where the male was thus displaying himself were several young ones." In corroboration of this, a boy told me on the 17th May 1850, that about four days previously he had seen a Bustard, with a white-looking bag hanging below the neck. I see in Dr. Jerdon's Catalogue, that he gives an extract from Mr. Elliot's notes to this effect; speaking of the cock Bustard, he says: "He was strutting about on some high ground, expanding his tail, ruffling his wings, and distending his neck and throat, making the feathers stand out like a ruff." I do not find it recorded that the large Bustard of Europe (*O. tarda*) has this habit of showing himself off during the breeding season. The egg of the Black-headed Bustard varies in size; the one sent with this paper measures $3\frac{3}{10}$ ths in. in length, by $2\frac{3}{10}$ ths in. in width. It also varies in colour; the general colour is a brownish olive, dashed with pale brown. One egg which I had was of a nearly uniform palish blue. The egg now sent was found in a grassy spot on 18th December. As everything relating to this noble bird is interesting, I give a description of a young one brought to me on 28th December 1849. It stood about 10 inches in height; its beak was of a dirty whitish colour, nostrils large; irides clear pale hazel, and eyes very large; back mottled, very much as in the old birds, as also the wing feathers; front of the neck pale yellowish-brown, with a dark streak running down the sides; legs dull yellowish-white, feet the same, knee-joints very thick; there was down on the neck. This was quite a young bird, very feeble on its legs, and barely able to stand. The Black-headed Bustard utters, when frightened, a harsh barking note. Its flight is like that of the Heron, a steady flight, sustained by the continued flapping of its large wings.

OTIS AURITA (Lath.). FLORIKIN.

I have not met with the Florikin sufficiently often to allow me to enter into the argument as to whether the Black Florikin is the male bird in its breeding plumage, or a distinct species from the common brown Florikin, but Dr. Jerdon's arguments in his "Illustrations of Indian Ornithology," appear conclusive, that the black and brown are one and the same bird in different states of plumage. But this point might soon be set at rest, by sportsmen and ornithologists in India ascertaining whether the black plumaged birds are ever met with during the cold weather and spring. That the male of the Little Bustard (*Otis tetrax*) should to a certain extent assume this black plumage during the breeding season, affords strong ground for the supposition that the Black Florikin is the male in his nuptial dress. The Florikin breeds during the end of the monsoon, laying three eggs of a dark olive-green colour, spotted and dashed with light brown, $1\frac{2}{10}$ ths in. in length, by $1\frac{2}{10}$ ths in. in width, the greatest width being about the centre. The egg now sent was procured with two others early in September. An officer, who was out shooting, put up a Florikin and killed it, and on going to the spot where she rose, found three eggs. I had two specimens of the Florikin sent

to me, both males, one in beautiful black plumage on 2nd October, the other in the brown plumage on the 4th February.

Family COLUMBIDÆ.

Genus COLUMBA.

COLUMBA GENAS. BLUE PIGEON.

This Pigeon is very common in the Deccan, inhabiting holes in old forts, walls, temples and wells. It breeds during the cold season, laying two white eggs. Holes and ledges in wells are its favourite resorts for breeding. The egg measures $1\frac{1}{10}$ ths in. in length, by 1 inch and nearly $\frac{1}{10}$ ths in width, and is of a clear shining white. An egg is sent with this paper; it was taken from a well on the 8th December.

Genus TURTUR.

TURTUR CAMBAYENSIS.

Of this Dove, Dr. Jerdon says in his notes,—“This little dove abounds over most of India, both in low jungles and near villages and cantonments, being found, especially towards the north, in every garden, and frequenting stable-yards, houses, &c.” It is, I believe, the same as the small Dove to which—not knowing that it had been previously named—I gave the name of the Vinous-necked Turtle, on account of the colour of its neck. If this be the case, it breeds during the month of March, building its nest in low bushes, and laying two white eggs, rather more than $\frac{1}{10}$ ths of an inch in length, by nearly $\frac{1}{10}$ ths of an inch in breadth.

TURTUR RISORIA.

This Dove is considerably larger than the last, and is easily distinguished by the white crescent on its neck, like the Wood Pigeon of this country. It abounds in every place; amongst the prickly-pear hedges and thickets near villages, in groves of babool trees, and bushes. Its half plaintive, half laughing note, is heard as soon as it becomes light, and if the trees over your tent happen to be its resort, it is anything but conducive to sleep. This Turtle breeds during the cold season, building in low babool trees; its nest is composed of a few twigs and pieces of grass. It lays two white eggs, $1\frac{1}{10}$ ths in. in length, by rather more than $\frac{1}{10}$ ths in width.

Order GRALLATORES.

Family ARDEADÆ.

Genus GRUS.

Subgenus ANTHROPOIDES (Vieillot).

GRUS VIRGO. DEMOISELLE CRANE.

This Crane visits the Deccan during the cold weather, but sometimes remains as late as May. I saw a large flock of them on the

river Seena, near Waterphul, as late as 24th May, and was told that one had been brought into the cantonments of Ahmednuggur as late as 12th June, but I never heard of any remaining to breed. It would be most interesting to find out their breeding haunts, their manner of nesting, and the number and colour of their eggs. The greater portion leave the Deccan at the end of March or beginning of April, and return at the end of November. They feed in the grain fields, retiring to the larger rivers about ten o'clock, where they may be seen standing in large flocks in the shallows.

Genus ARDEA.

Subgenus ARDEA.

ARDEA CINEREA (Lath.). COMMON HERON.

A tolerably common bird in the Deccan, frequenting tanks and rivers. I found two nests in a tall peepul tree on the 27th February; one contained the egg sent with this paper, the other was a nest just finished, and contained no eggs. This bird is considered, I believe, to be identical with the English Heron; it most probably therefore lays four or five eggs, as Mr. Yarrell states that the English Heron does. The egg is a uniform sea-green colour, $2\frac{4}{5}$ ths in. in length, by 1 inch and rather more than $\frac{1}{5}$ ths in width.

2. AN ARRANGEMENT OF THE FAMILIES OF ECHINIDA, WITH DESCRIPTIONS OF SOME NEW GENERA AND SPECIES.

By DR. JOHN EDWARD GRAY, F.R.S., V.P.Z.S., P.B.S. ETC.

MM. Agassiz and Desor have given the generic characters and a list of the species of *Echinida*, but do not divide the genera of the normal division into families. I propose to divide them into the following groups.

The *Echinida acrocystos*, or those which have a vertical dorsal vent, a regular globular body, with an inferior central circular mouth, armed with conical jaws, furnished with five elongate acute teeth, and with the ambulacra forming continuous vertical bands from the mouth to the vent. They may be divided into the following families.

I. *Tubercles of spines perforated; spines elongate; body circular.*

Fam. 1. CIDARIDÆ.

Ambulacra narrow, formed of double pores; interambulacral plates few, with a single large tubercle; spines thick, solid.

1. *Cidaris*. Tessera even-topped.

2. *Goniocidaris*. Tessera bevelled on the edge.—*G. pistillaris*.

Fam. 2. DIADEMADÆ.

Ambulacra narrow, of one series of double pores; interambulacral plates numerous, with two or more rows of tubercles; spines slender, often tubular.

1. *Astropyga*. Body depressed; ambulacral area with very small crowded tubercles, bearing very thin spines, much smaller than the interambulacral spines and tubercles; interambulacral area with smooth bands.

2. *Garelia*. Body depressed; ambulacral area narrow, with two or four series of small tubercles, and thin spines; interambulacral area with oblique series of large tubercles and spines, but without any smooth band; spines tubular.

3. *Diadema*. Body globular or subdepressed; ambulacral area with the same sized tubercles and spines as the interambulacral area.

II. *Tubercles imperforated.*

Echinidæ, Gray, 1828.

Fam. 3. *ARBACIADÆ*.

Ambulacral area narrow; ambulacra narrow, with a single series of double pores; body circular; spines short, solid.

1. *Agarites*. Upper surface of the interambulacral area without tubercles.

2. *Arbacia*. The upper and lower surface of the interambulacral area covered with tubercles.

Fam. 4. *HIPPONOIDÆ*.

Ambulacral area as wide as the interambulacral; ambulacra wide, formed of three separate vertical rows of double pores. Body circular; shell thin.

1. *Amblypneustes*. Body high; porous zones not quite regular; mouth small, entire.—*A. ovum*.

2. *Boletia*. Body depressed; porous zones regular, inner separated by a vertical series of tubercles; mouth very large, with five deep slits.—*B. pileolus*.

3. *Hipponoë* (Gray, 1841). Body swollen; two outer porous zones regular; middle one interrupted; mouth small, slightly cut.—*H. Sardica*.

4. *Holopneustes*. Body swollen; two outer porous zones regular; middle one separate or interrupted; mouth small, entire.—*H. porissimus*.

Fam. 5. *ECHINIDÆ*.

Ambulacral area half as wide as the interambulacral area, with two (or three) close series of double pores, placed in threes; buccal membrane naked; body circular.

A. *With angular pores at the junction of the plates.*

1. *Mespilia*. 2. *Microcyphus*. 3. *Salmacis*. 4. *Temnopleurus*.

B. *Without any pores at the angles of the plates.*

5. *Echinus*. 6. *Psammechinus*. 7. *Heliocidaris*.

Fam. 6. ECHINOMETRÆ.

Ambulacral area only half as wide as the interambulacral area ; ambulacral pores in groups of four or more, forming an arched series round the ambulacral tubercles.

A. *Body circular.*

1. *Strongylocentrotus*. Spines equal, subulate, short.

B. *Body oblong.*

2. *Echinometra*. Spines subulate, subequal.
3. *Holocentronotus*. Spines of back elongate, subtriangular ; of the oral side large, spatulate.
4. *Colobocentrotus*. Spines of the back very short, truncated ; of the oral side spatulate.

Dr. Gray described the following species, which he regards as new, from the British Museum Collection.

Genus CIDARIS.

* *Spines smooth or granular.*

1. CIDARIS ORNATA.

Depressed. Tubercles of interambulacral area rather distant ; spines lanceolate, subulate, depressed, white, red-ringed ; base with series of small red spots, and with regular longitudinal series of granules ; each side with one, and the upper surface of the base with two series of white angular spines ; spinules white, with a central red streak.

Hab. East Indian Seas.

** *Spines verticillate-spinose.*

2. CIDARIS VERTICILLATA.

Depressed. Interambulacral tubercles rather far apart ; spines of upper surface rather elongate (about as long as the diameter of the body), subulate, smooth ; some subulate at the top, others with scattered conical spines, others obliquely truncated, cupped, and spinose at the tip ; spines of lower surface shorter, cylindrical, truncated, granular near the tip ; those of the oral surface much spotted, truncated, compressed and largely granular near the end.

Hab. — ?

3. CIDARIS ANNULATA.

Orange. Rather depressed. Interambulacral tubercles of moderate size, far apart ; spines elongate, subulate, tapering, red and white ringed ; suprabasal ring white ; with longitudinal ridges. The ridges of the lower half of the spines spinulose and with scattered larger spines ; sometimes placed in lines. The dorsal spines sometimes truncated and slightly cupped at the tip ; ambulacral spinules narrow, flat.

Hab. West Indies.

4. *CIDARIS SPINULOSA*.

Interambulacral tubercles small, very far apart; spines elongate, fusiform, red-brown, with close squamose longitudinal ridges and scattered subverticillate acute and small spines; the dorsal spines truncated, cupped and spinose at the end; ambulacral spinules narrow.

Hab. — ?

Genus *ASTROPYGA*.5. *ASTROPYGA DEPRESSA*.

Shell depressed, very thin; ambulacra swollen; interambulacral area with a very wide smooth band in the middle and on each side of the upper part; the lower part of the centre of each area with three oblique series of larger tubercles; ovarian plate broad, triangular.

Hab. — ?

Genus *GARELIA*.

Ambulacra broad; the pairs of pores crowded, so as to form two, or rarely three, series; ambulacral area narrow, upper part with four series of small, and lower part with two or four series of rather larger tubercles; spines of ambulacral area bristle-like, very slender; interambulacral area with several oblique series of larger tubercles, without any smooth band on the back near the crown; ovarian plates moderate, triangular.

* *Ambulacra convex, area linear, spines elongate, subulate, hollow, covered with whorls of lanceolate scales.*

6. *GARELIA ÆQUALIS*.

Ambulacra convex; ambulacral area with two series of tubercles, the outer series rather the largest, rather narrowed below; upper side of ambulacral area with 5·5 oblique series of larger tubercles; ovarian plate elongate trigonal; spines purple, or purple and white ringed.

Var. α. With spines pale, white-ringed.

Var. β. Spines purple; underside obscurely pale banded.

Var. γ. Spines purple, not banded.

Hab. Mauritius.

** *Ambulacra flat; area wide, with four or five series of spines, near vertex narrow, with two series of tubercles below; spines subulate, tapering, longitudinally striated.*

7. *GARELIA CLAVATA*.

Interambulacral area with four oblique series of larger tubercles; ambulacra slightly raised; the upper part of the area near the crown broad; each side with two or four or six series of small tubercles; the lower part narrow, with a single series of rather larger tubercles.

Genus TOREUMATICA.

* *Transverse sutural grooves wide and deep; back granular.*

8. TOREUMATICA HARDWICKII.

Transverse sutural groove deep, wide; tessera of interambulacral area high, about twice as broad as high, with one large and several scattered unequal smaller tubercles.

Hab. —? Presented by General Hardwicke.

** *Transverse sutural grooves narrow and small; back equally granular.*

9. TOREUMATICA GRANULOSA.

Transverse sutural groove narrow and shallow; interambulacral tessera with a subcentral row of large, and numerous nearly equally scattered smaller tubercles. Near the circumference the secondary tubercles become more distinct. Base concave.

Hab. —?

*** *Transverse sutural grooves indistinct; back equally tubercular.*

10. TOREUMATICA REEVESII.

Depressed, thin; tessera of interambulacral area with a single series of large, and several unequal-sized smaller tubercles. Under side rounded, concave in the middle; ambulacral area with two, interambulacral area with three rows of subequal tubercles; holes between tessera distinct, between ambulacral tessera circular and deep.

Hab. China. Presented by J. R. Reeves, Esq.

**** *Transverse sutural grooves indistinct; back with a smooth band, near the suture between the interambulacral areas.*

11. TOREUMATICA CONCAVA.

Depressed, thin; middle between two interambulacral areas on the back smooth; interambulacral tessera with a few unequal tubercles near the ambulacra. Under-side deeply concave, largely tubercular; ambulacral area with two, interambulacral with three series of large tubercles.

Hab. China.

3. EXTRACTS FROM THE LETTERS OF DR. HENRY GOULD, RELATING TO THE NATURAL HISTORY OF WESTERN INDIA. COMMUNICATED BY HIS FATHER, J. GOULD, ESQ., F.R.S.

The following extracts have been placed at the disposal of the Society at the urgent request of the Secretary, because he fully appreciates the value of original observations so clearly and naturally expressed, and because he hopes that the appearance of this record of them will induce corresponding members of the Society in other parts of the world to occupy themselves in a similar manner.

The first of Dr. Gould's letters is written from Bombay, and dated—

Feb. 26, 1854.

Within two yards of my tent, as I write, are several species of birds. 1st, The hoopoe (*Upupa Senegalensis* ?), very tame, and perching about at my feet, within reach of a stick. 2ndly, Two species of wagtail, white and grey, fighting with the hoopoe: sparrows innumerable, but different from ours; they are perched in a cluster on a trelliswork at the tent-door. Two crows are sitting on the tent-pegs, one on each side of the entrance; a bird called "mino" here (*Pastor Mahrattensis* ?) is feeding two yards off; whilst another pretty black bird, with a long tail, published in one of the numbers of the 'Birds of Asia,' is pluming its feathers within arm's length. Kites here are as common as crows,—literally in hundreds, performing the office of scavengers.

Bombay, March 7, 1854.

Ornithology, you may be sure, will not be forgotten. The following species have already fallen to your gift of a double-barrelled gun. Firing into the midst of a flock as it swept by, I dropped four of the *Pastor roseus* in very fine plumage. Kingfishers are common and very beautiful; *Nectariniæ* also, of which I shot several, but have no means of determining the species at present, my books not having arrived. A fine collection of these beautiful birds could be made here. King crows are to be found everywhere: what is their scientific name*? Sandpipers are as common and tame as larks. The Bulbul (*Pycnonotus jocosus* ?) abounds, and commits sad havoc in the gardens; several species of wagtail, to me unknown, various raptorial birds, &c.

Last Monday I paid a visit to Elephanta. It contains many birds, strange and new to me,—plenty of pigeons, doves, parrots, and numerous pretty finches; and horrible thickets of Euphorbia, the prickles of which pierce clothes, boots, and everything, and the juice stings your eyes, if by chance it gets in them.

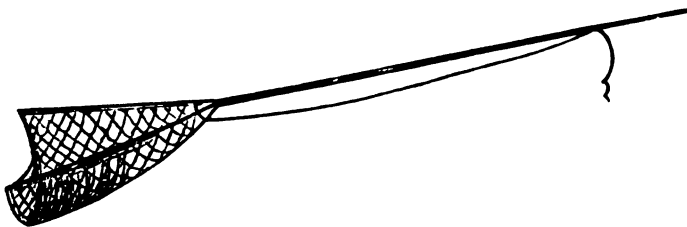
Kotree, opposite Hyderabad,
April 17, 1854.

The men went on shore to cook their suppers before it became dark, whilst the officer in command and myself went for a stroll with our guns. The ground was covered with sandpipers, curlews, terns, gulls, spoonbills, flamingos, herons, ducks, and, in fact, every species of water-fowl. We tried for the ducks, but they were very shy; and after an hour's wading, I got a shot at a brace of shieldrakes flying overhead. Firing right and left, I killed one and wounded the other (not bad for a beginner). They are fine birds, very similar, if not quite the same, as our own species. Mr. Lewis knocked over a shoveller, and that was the extent of our sport. In the winter-time the ducks and other wild fowl congregate here in thousands upon thousands, and no place could be better adapted for them. There are some very pretty river terns, and a most lovely kingfisher; but I

* *Dicrurus macrocercus*.

am in such a delightful state of ignorance as to what birds are scarce and which well-known, that I skin but few; and no one in the Presidency understands or cares the least for them; and as for books, the word "ornithology" is not comprehended. The first numbers of the 'Birds of Asia' would be of very great assistance, as also Colonel Sykes's Catalogue. Your works have been very much admired by all who have seen them.

I shot some of the famed black partridge of Scinde, *Francolinus vulgaris*, which you must know well. It is a very handsome species. As a bird for the table, it is excellent, the flesh white and delicate. I also shot a very fine plover with a coral-red fleshy expansion extending from the eye over the forehead, and meeting on the opposite side. The throat and chest are black, legs yellow, eye dark brick-red. What is it? I have its egg. The bird is common enough here. I have also the egg of an *Ædicnemus*. What species are there of this genus? The egg is very similar to that of our own in England. The last day of the voyage great excitement was caused by the appearance of alligators in the river. They are common above Hyderabad, and ugly green-looking beasts they are, crawling about on the sand-banks. But *the* peculiarities and *the* lions of the Indus are the *pullah* and the *pullah*-fishers. The *pullah* is a much-esteemed fish, said to be found only in the Indus: it is something like the grey mullet in appearance, and in taste little better than a mackerel, but is thought a great deal of. Every one eats *pullah*. It is caught in the following manner, by a particular caste of natives brought up to the business. A large earthen-vessel is procured, shaped like a lentil-seed, with an aperture at the top; the vessel is about a yard in diameter, and half a yard deep, the orifice 8 inches across. This of course floats on the water, and will sustain a considerable weight. Pushing it off from the side, the fisherman throws himself on his belly across it, and so closes the aperture with his body, thus forming a kind of boat, which is propelled by the motions of the arms and legs, as in swimming. This buoys him up on the rapid stream, and prevents his being swallowed up by the eddies of the river, and also enables him to use his net, which is stretched across a kind of fork attached to the end of a long pole. This machine is held perpendicularly in the water,



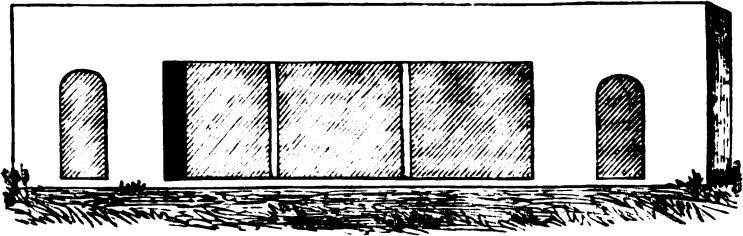
the ends of the fork touching the bottom. The current causes the net to bag and spread out as the man floats on his earthen pot down-

stream. The pullah, lying head up, cannot see the net, from the muddiness of the water, so that it comes upon them unawares. The fisherman feels a tug, and instantly closes the net by means of a string he holds, and the pullah is caught. The next process is to haul him up, and stick the poor brute with a skewer, whilst still in the snare; then taking it out, and shifting his belly to one side, the pullah-wallah drops the fish into the pot and resumes his agreeable employment. Having floated some miles down-stream, he paddles to shore, shoulders his support and net, and walks back again to the point from which he started, repeating the whole process again and again, from morning to night, from youth to old age, earning a few anas per diem.

Kurrachee, May 4, 1854.

In this letter Dr. Gould gives a journal of his overland journey from Hyderabad to Kurrachee.

April 18.—Up at sunrise; went out for a walk; saw a few hares, but no black partridge; shot some pigeons for breakfast. The country is very sandy, with here and there patches of jungle; returned at 7, very hot and much disgusted. The village consists of about four huts and twice that number of inhabitants, and yields wood and water to the traveller, but no provisions of any kind. At 8 o'clock, was glad to retreat into one of the pigeon-holes of the Dhum-sallah, an outline of which I send you.



April 20.—The station, which is called Hulliaga, being placed in the midst of a capital shooting-ground, the first sound that struck me on awaking was the loud call of the black partridge all around the Dhum-sallah. They are very difficult to get within range, from their habit of running before the sportsman, and seldom rising. In order to get a "bag," you must have at least a dozen beaters. I managed, however, to kill a brace, after much labour and walking. The jungle here is very thick, and full of birds, hares and snakes; for the latter of which, including large boas, it is particularly celebrated; parrakeets are also very plentiful. Dined sumptuously on pullah and black partridge, both of which are capital; and, in a cool climate, where the partridge could be kept for a week or two, it would be quite equal to gelinotte; the flesh is plump, white and well-flavoured.

Ghiznee Sanatarium, June 1, 1854.

The only birds are the sand-grouse and a species of lark, the crows and sparrows even contemptuously avoiding such a dried-up place; about two miles distant is a creek banked with rocks, which is a favourite resort for water-fowl. In my pursuit of natural history this morning, an accident happened which I am afraid will lose me a good servant. A pair of hawks had built their nest in the rocks, about fifteen feet from the ground, and my gharawallah (groom) declared that nothing would be so easy as to take it, and that he could climb up the side of a house; so I sent him up, but when within a few feet of it he screamed out and fell; he afterwards stated that the devil (*shitas*) came behind and pushed him off; the fall would have been nothing on soft ground, but the poor fellow fell across a stone and injured his spine; I had to gallop into camp and fetch a palanquin and four men to bring him into hospital, where I am now treating him. The hills hereabout abound with jackals and hyenas, and one of the latter came within the tent-ropes last night after my unhappy goats; the barking of the dogs awoke me, when I saw him gazing affectionately at my throat, not two yards distant; a clout on the head with a stone sent him off.

I should like to start in the month of December to the Lake Munchar, beyond Hyderabad, where, during the winter, is to be found a reunion of all the water-fowl in Scinde: I am told that the ducks, geese, cranes, and, in fact, all the natatorial and wading-birds congregate there in immense numbers; thence to Luccur and Shikarpore, shooting all the way. I should then wish to explore an entirely new country, zoologically speaking,—Khelat—the temperature of which is somewhat similar to our own, freezingly cold in winter, with a delightful spring; it is well-wooded, and doubtless contains much of interest to the naturalist; with introductions from the Commissioner, I believe I should be well treated by the “Khan;” the only difficulty is to reach it. From Jacobabad to Khargarth, our extreme frontier military post, there are two routes, one by the well-to-be-remembered Bolan Pass (*vide* the march of our troops to Cabul), and the other by Gundawa and the Gundawa Pass. By the Bolan, the chances are about equal whether I should get through or have my throat cut, for the Khan cannot control the fierce Beelooch hill-robbers, although his own subjects; they would attack anything under the force of fifty men; by Gundawa the road is tolerably safe, being under the influence of the Scinde horse; that is the road I should take. It is seventeen days’ march between Jacobabad and Khelat, which I should reach at the commencement of spring, and a month or six weeks’ stay would enable me to ascertain the zoological resources of the country, after which I should return to Kurrachee and resume my medical duties. This leave I do not wish for any private, but for a scientific purpose, and the collections I may make would be sent, after any novelties had been described, to the Company’s house in Leadenhall Street, or such of them as they may want for their museum; everything, however, must depend upon circumstances.

Ghiznee Sanatarium, July 15, 1854.

It may be interesting to you to know that a fine Houbara Bustard (*Otis Macqueeni*) is very common here during the winter; it is much sought after by the officers, and considered fine "shikar" or sport; my tent is pitched in the midst of the Houbara ground. A very pretty small species of deer is also common in this neighbourhood; it is about the size of a gazelle, with sharp straight horns, is very difficult of approach, and incredibly fleet; I suppose it is well known; will you inquire, and let me know its name? the young are sold in the Bazaar at one rupee each and soon become very tame; I have one now that is allowed to wander about at pleasure, and which invariably comes to sleep in my bed at night: any number of beautiful Amaduvades may be bought in the Bazaar at one penny per pair, and Parrots at fourpence each; if the means of transit were easy, I could send home a gross of these small birds.

I will now give you a short account of an excursion to a well-known spot called "Munghur Peer" or the "Munghur Talou," *Anglice* Holy Alligator or the Alligator Tank. Some time ago, a very holy mussulman pitched upon this oasis as his dwelling-place; a pure spring flows from a rock in a valley surrounded by immense barren volcanic hills, forming part of that range of rugged mountains which is seen so conspicuously from Kurrachee; the spring above mentioned vivifies a small extent of surrounding country, nourishes groves of date palms and banian trees, and encourages the cultivation of various fruits and vegetables; the old gentleman, finding that he had fallen into a good berth, sanctified it: here he lived and died, after which happy release his body was conveyed to the top of an awfully high rock and there buried; his faithful disciples erecting a large tomb over his remains: this is said to be a fine work of art, but I have seen no one who has had the courage to ascend and inspect it. The spring after his death became more holy than before, and a tolerably-sized mosque was built over it; a large stone tank with steps was constructed for it to flow into, and the overflowing surplus water now forms a marsh or pond which is full of small islands a few feet distant from each other, and it is in the water between these that the alligators are to be found; there are several hundreds of them, varying in size from 6 inches to more than twice as many feet; they live in a state of great fraternity; their calm serenity being only disturbed by that most useful dispensation of providence, the larger devouring the smaller ones; they are considered most holy by the mussulmen and are actually worshipped by them; in which, however, they slightly depart from the precepts of the Koran, which says, "*La Ala ila allah—Mahomed rasoul allah*," the famous profession of the mussulman faith. From most of the districts of Scinde, the natives make pilgrimages to these beasts, throwing goats to them as peace offerings; the inhabitants of the small village adjoining the mosque feed them regularly, and are great in the odour of sanctity. Should a little native urchin be swallowed, through his indiscreetly venturing too near, they say his is a happy *kismet* or fate, for he is sure of paradise. The brutes do not confine

themselves to the water, but wander among the palm trees and low bushes, and wherever a sahib discovers a cool retreat, there a large alligator is sure to be found, and before a transfer of seat can be effected, must be fought and dislodged, or run away from, if he charges. Not long since one of them killed a man, upon hearing which two officers resolved to take vengeance, and accordingly, in spite of military prohibition, shot the delinquent, whereupon all the crazy and bigoted inhabitants turned out to avenge the insult, and had they not been well armed it would have gone hard with the sacrilegious scamps. These holy reptiles are not without their royal family, of which, however, there exists at present but one lineal descendant, by name *moor-sahib*, who is the acknowledged king of the alligators; although superior to his subjects not only by his descent but by his enormous size and appetite, he is but a liliputian in size, and a trifle as regards his powers of eating, compared with his late sainted and lamented sire, concerning whom the inhabitants of the village relate marvels of masticatory prowess. The present king does not associate with his subjects, but is built into a large underground tank covered above by masonry; in the roof of this palace is a hole something like, but rather larger than, that into a coal-cellar; when his majesty is to be fed, his attendant thrashes the water with a long stick through the hole in the roof; and the well-known sound brings him to the surface, where, without condescending to uncloset his eyes, he opens an enormous pair of jaws and waits patiently till the delicate morsel, such as half a donkey or a goat, is dropped into them; the jaws instantly close with a terrific snap and the royal personage disappears from sight.

The rains have just set in here;—very pleasant for those who live in houses, but quite the contrary for poor wretches who, like myself, are under canvass; my tent will stand two days' rain well enough, but after that it begins to feel moist, gradually-increasing puddles make their appearance below, and water drips in from above; but one hot day makes all dry again. After a shower your tent becomes the refuge of all the vermin in the neighbourhood; snakes, scorpions, centipedes, frogs and lizards occupy the dark corners, whilst all attempts at reading or eating by night are frustrated by the countless myriads of large ants, from half to one inch in length, that fly into every habitation, and cover the lamps, table-cloth, books, &c., smother your shirt and collar, get down your back, and after having caused an immense deal of annoyance and inconvenience, leave their wings as a parting present and crawl away; so that in the morning the tables, chairs, and other furniture, and the floors are found strewn with these relics. A very beautiful ground spider makes its appearance after the rains; it is about the size of a bean, and of the most splendid scarlet, resembling velvet in appearance and lustre; it is seen at no other time, and is apparently driven from its underground retreat by the rain.

Ghiznee, August 15, 1854.

Ghiznee is not the locality from whence to supply you with much information as regards Scinde; its natural products being but few;

in the absence of anything of greater moment, perhaps you would like to know something of the domestic resources of Kurrachee and the circumjacent country. Substantials in the shape of beef and mutton are plentiful and cheap; the latter is small, very small, a leg weighing about four pounds, but it can occasionally be had somewhat larger; its price is one ana per pound. The sheep are celebrated for their tails, which are of an enormous size, and one mass of fat. Good beef is also to be had at the same price as mutton. Kid's flesh is not despised, and one day in the week pig is converted into pork; but our friend so much relished in England is but little honoured here, none but the very lowest castes condescending to touch him, and his very name being an abomination; so if you wish to irritate a native, hint at the "suer," in connection with himself, and the required irritation will be immediately produced. Fowls are brought into Kurrachee in vast numbers, and fetch four anas (sixpence) each. Ducks can be obtained at a little higher price, but are considered by the Mahometan population as unclean. Turkey being an expensive luxury, is only produced at mess on great nights. Pigeons are very plentiful, but are not worth eating, besides being considered holy by some of the castes. The sea and harbour supply us with fish in any quantity and of every size; many species are brought to market, from the Sardine to the noble "Seer" fish, which is about the size of a cod and superior to it in flavour. Oysters are abundant, and when in season rival "real natives:" for one hundred you pay sixpence. The pearl oyster, although not eaten, is eagerly sought after for its precious contents. Magnificent prawns, of doubtful feeding, are caught in numbers, and are sold at the ridiculously low price of one ana (three halfpence) for two pounds weight; they grow to an enormous size, some being 7 or 8 inches in length, but the smaller ones are the best.

Ghiznee, Sept. 20, 1854.

You will be pleased to hear that I have just received a long letter from Mr. Blyth, of Calcutta, who evidently opines, that, having been brought up in the halls of science, I must be thoroughly acquainted with its long-named treasures—painful delusion!—and quite easily requests me to procure for him species of the *Soricidæ*, *Erinacidæ*, *Hypsipidæ*, *Malacocercidæ*, and many others; all which I would most readily do. But what sort of a beast is an *Erinaceus* or a *Malacocercus*, still remains a profound mystery to me, and is likely to be, until I get hold of a treatise on hard names which will unravel the secret; for if it be supposed that such knowledge ought to come by the "light of nature," I can only say that she has not as yet illumined me by her countenance. This is why I requested a treatise on the science of ornithology. I shall get on better when I receive my books. Mr. Blyth wishes a correspondence to be kept up between us, and of course I shall be happy to promote his views in every way I can.

Shark-fishing is going on actively at present; they are caught in large nets, which are dragged across the harbour. The species is the ground-shark, the fins of which are considered a great delicacy

by the Chinese; and it is to supply them that the sharks are captured.

Enclosed is a curious little bird which I shot on the sea-shore. What is its name*? It frequents the low salt marsh plants that grow at the edge of and even in the water. It is extremely difficult to shoot, and when shot, equally hard to find; it runs among the roots, and occasionally perches on a twig, gives forth a wheezy feeble song, and instantly drops into the thicket. The eye is dark.

Ghiznee, Oct. 5, 1854.

The warm weather has given life to numbers of the dragon-fly family, but their short life is cut still shorter by the numbers of birds that come, self-invited, to the feast; shrikes, bee-eaters, hoopoes, stone-chats, wheatears, willow-wrens, and many other species, have now appeared about the rocks, where, a month since, nothing but a lark was to be seen. Terns, that before could only be found at sea, now come wandering over the land, and, hunting up and down, soon fill their stomachs with the delicious morsels; even the very cheels (kites) have given up their carrion-feeding propensities. The consequence of this good feeding is very distressing to the collector, for the birds become so fat that it is almost impossible to skin or preserve them: my servant is in despair, and brings me a mass of oily feathers as the result of an hour's labour. Is there any remedy? Large flocks of cranes are continually passing over my tent, "*en route*" to the Indus. Geese have been seen, and I myself have fired at ducks, all which are indications of approaching winter; wading-birds of all kinds are now exceedingly common, but very difficult to procure, for they congregate on large open flats left at low water, and cannot be approached. The salt-water creeks too, in which they are to be found at certain stages of the tide, are quite exposed and without cover on their banks; so that if by dint of great care and caution you can manage to get within 300 yards of the water, you are then sure to hear some small plover or sanderling set up his shrill piping, to which that wariest of birds, the curlew, immediately responds, and away scuds every feather in the creek, leaving you to expend your vexation and charges upon the crabs and mud. There is one crane in particular that I have been after many times; he is a very cunning old gentleman, and evidently fond of a joke; he knows exactly how far a gun will carry, allows me to approach, by dint of much knee-grazing and elbow work, to within 100 yards of him, and then, rightly imagining that a nearer proximity would be dangerous, gives a hoarse chuckling laugh, and, after four flaps of his enormous wings, is hopelessly gone; but I will be even with him some day.

Enclosed you will find a rough sketch of a thrush-like bird killed by me yesterday; it is the only one I have seen, but my servants know it well, and state that it is a beautiful songster. If you can make out the species from my drawing, I should like to know its name†.

* *Suya lepida*, an extremely rare bird in the collections of Europe.

† *Certhilauda bifasciata*, or an allied species.

"O me miserum! O me, miserabile dictu!!" a dire misfortune has befallen me. One morning, while pursuing my friend the crane, I broke the stock of my gun, or rather the horse broke it for me. As you may expect, I was much annoyed; first, because it was a present from you, and secondly, because the gun was a capital one to shoot with, and I was rapidly improving in the art. As it is impossible to get a new stock in Kurrachee, I have been obliged to expend £30 in the purchase of a fresh gun, and have obtained an excellent one with double barrels for shot and rifle fitting the same stock: I will send my lame gun back to Fisher's to be restocked.

Mr. Frere has, I believe, very kindly written to Lord Elphinstone respecting my journey to Khelat, and has also offered the services of an excellent person in his pay to accompany me; with this assistance, if leave be granted me, I hope to make a good collection, and do some service to science; I intend shooting everything that comes in my way, and it will be your task to determine whether anything be new or otherwise. You will say, this is rather Don-Quixotish; but the sight of a fine country will quite recompense me for any little self-disgust at the butchering nature of my propensities; all for science, "*ça va bien*," the healing pill is swallowed. I wish that you could be with me, the trip would then be a great treat, and I might learn something. Please to let me know how to make "*dampier*," as, if I go, I shall have to be my own baker for a few months; I should like to know this by return of post, and also to receive any other hints your bush experience enables you to give. As I have before said, if I am allowed to take this journey, I shall proceed as soon as another assistant-surgeon has been found to supply my place. Towards the end of next month, on the approach of winter, all the regiments will be on the move: ours, it is expected, will be ordered to Hyderabad, and the fusiliers will supply our place at Kurrachee; the 83rd are ordered to Deessa in Gujerat, a frightfully hot place, but with capital shooting; for there abound the Indian lion and tiger, antelopes, and Sambur deer, and buffaloes are seen in great numbers; the artillery will proceed to Poonah, and the 14th Native Infantry to Shikarpore, her Majesty's 86th having the doleful prospect of Aden before them. Mr. Frere starts for his annual tour of the district on the 2nd of November, taking with him a good hunter and stuffer; he has requested me to let him know what objects are most desirable for the advancement of science, which, as you are aware, he is always anxious to promote; he has already sent considerable collections to the Norwich museum.

March 27, 1855.

Dr. Gray, F.R.S., Vice-President, in the Chair.

The Chairman read the following extract from a letter received from Francis Brent, Esq., of Sandgate, giving some further particulars regarding the destruction of the Conger eels by the late severe frosts. The letter was dated :—

Sandgate, 25th March, 1855.

You seemed to take some little interest in the account of the Conger Eels, so I will send you a few additional particulars. The *oldest* inhabitants recollect only two other occasions on which the fish in the sea were killed by the frost, one about thirty years and the other twenty-two years ago; indeed then the destruction was not nearly so great as during the present winter. Some of the eels were five and six feet long, and weighed between fifty and sixty pounds. One boat went out, and in three or four hours the crew picked up 800 eels. They were mostly found near a feeding-ground called the Diamond-bank, but were more or less all round the coast: some of the sailors here say, they have seen conger eels which had been killed by the cold floating in the North Sea, but never in the Channel. The only other fish that seem to have suffered were the mullet, many of which were found in Southampton harbour. Twenty-two years ago, the gurnets also were destroyed. The eels were all found with head and tail under water, part of the belly and vent at the surface, the whole fish bent almost into a circle. The fishermen say that the conger-eel is a very clean-feeding fish, and will only take live bait or flesh that is quite fresh. He feeds at night and near the surface of the sea, and some of the men attribute the destruction to the fact that the cold acted upon the creatures' *vents*, in proof of which they assert that the vents always presented a different appearance from the other part of the body, and that decomposition invariably commenced there. Others affirm, that the cold attacked the swimming-bladders, and so prevented the fish from sinking, and thus they perished from not being able to get into a warmer current of water than was to be found at the surface.

At first only a few of the fishermen would pick them up, as they said they were not fit for food; but some having been sent to London, a person there immediately telegraphed that he would purchase any quantity that could be procured, without reference to what state of freshness they were in. He boiled them down and made gelatine of them. It was, however, almost too late, for the wind changed almost immediately after his message was received, and the eels either sank from their air-bladders bursting or were carried out to sea.

Dr. Gray also stated that in a shallow pond in front of Lord John Russell's house in Richmond Park, all the freshwater fish, including carp, tench, roach, eels, and the frogs and toads, were killed by the frost in February 1855; and numerous specimens were rotting on No. CCLXXXVII.—PROCEEDINGS OF THE ZOOLOGICAL SOCIETY.

the bank. He had observed the freshwater fish similarly killed in a pond near Beddington, Surrey.

Mr. Gould exhibited a small collection of birds from Scinde, being the first of his son's contributions to Indian ornithology, and remarked, that although there was nothing new among them, still they comprised several species which are of interest from the circumstance of their being rare both in India and in the collections of Europe.

The following is a list of the species :—

Cypselus affinis, Gray.
Suya lepida, Blyth.
Certhilauda dumetorum, Stanley.
Galerida Chendoola, Blyth.
Calandrella brachydactyla, Blyth.
Saxicola atrogularis, Blyth.
Saxicola picata, Blyth.
Pratincola indica, Blyth.
Malacocercus caudatus, Dum.
Ploceus Manyar, Horsf.
Actitis hypoleuca, Linn.
Sterna — ? like *S. minuta*.

The following papers were then read :—

1. OBSERVATIONS ON THE SPECIES OF VOLUTES,—VOLUTIDÆ.

By DR. J. E. GRAY, F.R.S., V.P.Z.S., P.B.S. ETC.

In the following observations I shall confine myself to the genera of Volutes which form the tribe of *Volutina*; they are particularly characterized by having the sides of the base of the siphon furnished with an auricle; the tentacula far apart, united together by a broad veil, forming a hood over the head; and the eyes situated far back, behind the base of the small tentacles.

I am induced to make these observations, founded on the magnificent collection of specimens in the British Museum collection, because, though Professor Schumacher, and Messrs. Swainson and A. and H. Adams have arranged the species of the family, the genera they have used have not been founded on any consideration of the modifications of the animal, but solely on the external conformation of the shells themselves. I have considered this revision the more necessary, as in more than one instance these authors have regarded as belonging to different genera, shells which I am inclined to believe are only varieties of the same species.

1. *The animals of the greater part of these genera have broad teeth, with a more or less lunate base, and with three large acute lobes at the apex.*

1. *Some of these animals are viviparous. The shell of the very young animal has a very large irregular callous tip, which forms a permanent nucleus to the shell. The foot is large, and without any operculum.*

1. YETUS.

The shell ventricose, covered with a horny periostraca, which is more or less covered in the different species with a polished shelly coat, deposited by the expanded mantle. The spire is short, and irregular; the aperture expanded.

The animal is large, compared to the size of the shell, when expanded. It is ovoviviparous; the young when born being of a large size, and covered with a shell with a large irregular callous apex. The foot is large, partly covering the shell, which is sunk into its substance. Operculum wanting.

Confined to the coast of Africa and the shores of the Mediterranean.

The best character for the distinction of the species of this genus depends on the extent which the mantle covers the shell, shown in the shells themselves by the size of the polished coat. Unfortunately, the original surface, indicating the extension of the mantle over the surface of the shell, in this and other genera of this family, is often destroyed in cabinet specimens, even in the most recently-formed collection, which greatly deteriorates from their scientific value, and great care should be taken to observe that the specimens desired to be determined have not been injured in this respect.

Mr. Adams, by some oversight, observes, when referring to this genus, "These shells are *uniform* in colour, sombre, *covered with an epidermis*, and with a *deciduous* nucleus." (Genera, 159.) Several species are marbled; some have the epidermis covered with a glassy coat; and I am not aware that any shell has the nucleus deciduous, much less this genus, when they are enclosed by the older whorls.

A. *The only species found in the Mediterranean has a narrow deep channel near the suture; the shell is one-coloured, and the left side of the mantle and inner lip of the shell is much expanded over the last whorl.*

1. YETUS OLLA.

Voluta Olla, Linn.

Voluta papillaris, Gmelin.

Cymbium Olla, Menke, Adams, 150.

Cymba Olla, Brod., Sow. Spec. Conch. 7. f. 1 a, b, c, d.

Cymbium papillatum, Schum. 237.

Hab. Mediterranean.

B. *The species found on the coast of Africa have a broad wide channel on the suture of the shell. They may be divided into three groups:—*

* *The left side of the mantle and the inner lip of the shell rather expanded; the shell is mottled.*

2. YETUS NAVICULA.

Spire short.

Voluta Navicula, Gmelin.

Voluta Pepo, Solander.

Cymba Neptuni, pt., Brod., Sow. Spec. Conch. f. 2 a, b.

Cymbium Neptuni, Menke.

Hab. W. coast of Africa; -Gambia.

3. YETUS CYMBIUM.

Spire subconic.

Voluta Cymbium, Linn.

Cymbium Cisium, Menke.

Cymba Cimbium, Sow. Gen. f. 2; Brod., Sow. Spec. Conch. f. 9 a, b, c, d.

Cymbium Cymbium, Adams.

Voluta rubiginosa, Swainson, Exot. Conch.; Wood, Cat. Supp. f. 23.

Cymba rubiginosa, Brod. f. 7 a, b, c, d.

Cymbium rubiginosum, Adams.

Var. β . Spire produced, conic.

Cymbium gracile, Adams.

Cymba gracilis, Brod.; Sow. Spec. Conch. f. 8 a, b, c, d.

Hab. W. coast of Africa; Gambia.

**** The left side of the mantle and the inner lip of the shell much expanded over the last whorl; the shell one-coloured.**

4. YETUS NEPTUNI.

Voluta Neptuni, Gmelin.

Voluta Auguria, Solander.

Cymba Neptuni, pt., Brod., Sow. Spec. Conch. f. 2 c, d.

Voluta glans, Gmelin.

Cymba patula, Brod., Sow. Spec. Conch. f. 4, 4 b.

Cymbium patulum, Adams.

Cymba Tritonis, Brod., Sow. Spec. Conch. f. 3, 3 a, b.

Cymbium Tritonis, Adams.

Hab. W. coast of Africa; Gambia.

***** The left side of the mantle very much exposed, and, like the inner lip, covering the whole outer surface of the shell; shell plain-coloured.**

5. YETUS PROBOSCIDALIS.

Philin, Adans. Seneg. t. 3. f. 2.

Voluta proboscidalis, Lamk.

Cymbium proboscideale, Adams.

Cymba proboscidalis, Brod., Sow. Spec. Conch. f. 5 a, b, c, d; Sow. Gen. f. 3.

Voluta porcina, Lamk.

Cymbium porcinum, Menke.

Voluta Scapha, Solander.

Cymba porcina, Brod., Sow. Spec. Conch. f. 6 a, b, c, d, e, f, g, h, i, k.

Jun. *Voluta papillaris* v. *glans*, Gmelin.

Hab. W. coast of Africa; Senegal; Gambia.

2. The animals of the other genera are oviparous, the eggs being deposited in cartilaginous egg-cases like those of the other zoophagous mollusks. The shell of the just-hatched animal has a regular or subregular spiral tip.

A. The mantle of the animal is enclosed, and the inner lip of the shell is defined, or only slightly expanded.

a. Some have a ventricose shell, with a large expanded aperture, and five or six strong subequal plaits on the pillar. Foot large, and no operculum.

2. CYMBIUM. The Melons.

Shell ventricose, covered with a hard horny periostraca; the spire short, depressed, often sunken; aperture very large, expanded.

Cymbium Indicum, *C. tessellatum*, *C. Æthiopicum*, *C. Diadema*, and *C. armatum* are found in the Indian Ocean, and probably on the north coast of Australia; *C. Broderipii* at Manilla; *C. Miltonis* in Swan River, Western Australia; *C. Georginæ* and *C. umbilicatum* in Moreton Bay, on the eastern coast of Australia.

In 1833 I described and figured three new species of this genus in the Mollusca plates to Griffith's translation of Cuvier's 'Animal Kingdom,' under the names of *Melo Miltonis*, *M. Georginæ* and *M. Broderipii*. About the same time Mr. Broderip prepared an essay on the genus, which was printed some time after the above publication, as he refers to the species and figures. It was to appear in the 2nd part of Mr. G. B. Sowerby's 'Species Conchyliorum;' but this part was not published then. At Mr. Sowerby's death in 1854, Mr. Lumley, the second-hand bookseller, appears to have purchased the plates and text, as far as they had been prepared, from the executors of Mr. Sowerby, and published it on the 1st of March, 1855. This part contains the text without the figures of the genus *Melo*, the plates without the text of the genus *Cyclostoma*, and the plates and text of the genera *Amphidesma* and *Terebellum*.

† Spire enclosed, unarmed.

1. CYMBIUM MELO, Menke.

Melo indicus, Brod.; Adams.

Voluta indica, Gmelin.

Voluta æthiopica, var. γ , Born.

Voluta Melo, Solander.

Voluta præputium, Chemn.? (Junior).

Hab. Indian Ocean.

†† *Spire exposed, not produced, surrounded with arched spines.*

§ *Shell pale yellow, with two or three bands of square dark spots.*
Spines broad at the base, decumbent.

2. CYMBIUM TESSELLATUM.

Melo tessellatus, Brod.

Voluta tessellata, Lamk. ; Swainson.

Voluta Haustrum, Soland. MSS.

Cymbium æthiopicum β, Schum. N. S. 237.

Melo tessellata, Adams.

Hab. Indian Ocean.

§§ *Shell brown or pale with angular brown lines ; spines spreading.*

3. CYMBIUM ÆTHIOPICUM, Menke.

Cinnamon-brown, sometimes two-banded.

Cymbium coronatum, Martini, iii. f. 784.

Voluta Æthiopica, Linn.

Melo Æthiopicus, Brod.

Cymbium Æthiopicum, Schum. N. S. 237 ; Menke.

Melo Æthiopica, Adams.

Var. β. Spines decumbent.

Voluta Nautica, Linn.

Melo Nautica, Brod. ; Adams.

Cymbium Nauticum, Menke.

Hab. Indian Ocean ?

4. CYMBIUM DIADEMA.

Chestnut, white-marbled. Spines short, rare.

Melo Diadema, Brod.

Voluta diadema, Lamk.

Voluta amphora, Soland.

? *Melo senticosa*, Adams.

Hab. Indian Ocean ?

5. CYMBIUM ARMATUM.

Orange, white-marbled. Spines elongate, straight.

Melo armatus, Brod.

Voluta armata, Lamk.

Voluta Cithara, Soland.

Voluta ducalis, Lamk.

Cymbium ducale, Menke.

Hab. Indian Ocean ?

6. CYMBIUM GEORGINÆ.

Melo Georginæ, Gray, G. A. K. t. 34, 1833.

Melo mucronatus, Brod. 1855.

Melo mucronata, Adams.

Hab. Moreton Bay ; Blackwood Bay ; Port Essington.

7. CYMBIUM UMBILICATUM.

Melo umbilicatus, Brod. ; Sow. Gen.

Melo umbilicata, Adams.

Hab. Moreton Bay.

These species, or rather presumed species, appear to be varieties of the same kind, peculiar to certain districts of the Indian Ocean. If we select certain specimens of each, they appear very distinct; but if a large number of specimens of different ages, from various localities, are arranged together, the differences gradually merge into each other, and it is difficult, if not impossible, to separate them from one another. In the younger specimens the spines are generally distinct and crowded; sometimes they enlarge more rapidly than the rest of the shell as it increases in size; in other specimens, after a time they suddenly cease to be developed, and the larger external whorls are not armed behind.

††† *Spire exposed, convex, large, crowned with numerous small, rather inflexed spines.*

8. CYMBIUM BRODERIPPII, Gray. Japan Melon.

White, with chestnut lines or spots; young shell concentrically sulcated; hinder part of the whorls near suture crenulate.

Melo Broderipii, Gray, G. A. K. 1833.

Melo regius, Brod. 1855.

Hab. Manilla. Japan, *Humphreys*.

†††† *Spire produced, conic, armed with compressed inflexed scales.*

9. CYMBIUM MILTONIS.

Melo Miltonis, Gray, G. A. K. t. 29, 1833.

Melo cylindratus, Brod. 1855.

Hab. Australia; Swan River.

b. *Shell ovate or fusiform, covered with a thin periostraca; aperture moderate.*

§ *Pillar with four or five strong well-defined plaits. Operculum none. Foot moderate.*

3. SCAPHA.

Shell ovate or fusiform. Periostraca thin, smooth. Spire conic; aperture moderate; inner lip smooth, defined, pillar 5- or 6-plaited. Operculum none.

† *Nucleus or shell of the very young animal very large, irregularly spiral.*

1. SCAPHA MAMILLA.

Nucleus very large, subglobose, apex of spire lateral.

Voluta mamilla, Gray, Sow. Conch. Thes. 207. t. 50. f. 57, 58.

Cymbium mamilla, Adams, 159.

Hab. Australia; Van Diemen's Land.

2. SCAPHA DUBIA.

Nucleus large, rather irregular-shaped, spiral apex acute.

Voluta dubia, Brod., Zool. Journ. iii. 81. t. 3. f. 1; Sow. Conch. Thes. 209. t. 55. f. 115.

Fulguraria (Aurinia) dubia, Adams, 166.

Hab. — ? Cab. Roussel.

†† *Nucleus large, pale, regularly spiral, crenulated.*

3. SCAPHA VESPERTILIO.

Voluta Vespertilio, Linn., Sow. Thes. Conch. t. 47. f. 15, 23; t. 51. f. 67.

Cymbiola Vespertilio, Swains. Malac. 317.

Voluta pellis-serpentis, Lamk.

Voluta mitis, Lamk.

Cymbiola mitis, Swains. Malac. 317.

Voluta serpentina, Lamk.

Aulica vespertilio, Adams, 161.

Hab. Indian Ocean; Amboina.

4. SCAPHA PULCHRA.

Voluta pulchra, Sow., Tank. Cat. t. 4. f. 2; Conch. Thes. t. 51. f. 62; Wood, Cat. Supp. f. 6.

Aulica pulchra, Adams; 161.

Hab. North-east coast of Australia; Heron Islands.

5. SCAPHA NIVOSA.

Voluta nivosa, Lamk., Sow. Conch. Thes. 200. t. 51. f. 63, 64.

Aulica nivosa, Adams, 161.

Cymbiola nivosa, Swains. Malac. 317.

Hab. Australia; Garden Island; Swan River.

6. SCAPHA NORRISII.

Voluta Norrisii, Sow. Conch. Thes. 201. t. 51. f. 65.

Voluta nivosa, Wagner.

Aulica Norrisii, Adams.

Hab. Australia; Dupuch Islands, on reefs at low water.

7. SCAPHA RUTILA.

Voluta rutila, Brod. Zool. Journ. ii. 30. t. 3; Sow. Conch. Thes. 200. t. 46. f. 5, 6.

Voluta aulica, Kiener.

Aulica rutila, Adams, 161.

Hab. N.E. coast of Australia; Raines Islet.

††† *Nucleus large, regularly spiral, smooth.*

8. SCAPHA AULICA.

Voluta aulica, Soland.; Sow. Tank. Cat. t. 3; Conch. Thes. 198. t. 46. f. 9, 10, 11, 12; Wood, Cat. Supp. f. 4.

Aulica aulica, Adams, Gen. 161.

Hab. Sooloo Islands.

9. SCAPHA DESHAYESII.

Voluta Deshayesii, Reeve, P. Z. S. 1854, p. 73 Moll. pl. 26.

Hab. Solomon's Island.

10. SCAPHA PIPERITA.

Voluta piperita, Sow. Conch. Thes. 199. t. 51. f. 62.

Aulica piperita, Adams, 161.

Hab. —? Cab. Norris (only one specimen known).

11. SCAPHA MAGNIFICA.

Voluta magnifica, Chemn., Sow. Conch. Thes. 200. t. 54. f. 103.

Hab. Australia, in estuaries. Port Jackson, in two fathoms water; Stutchbury.

12. SCAPHA JUNONIA.

Voluta Junonia, Chemn., Lamk., Sow. Conch. Thes. 197. t. 42. f. 44.

Scaphella Junonia, Swains. Malac. 318; Adams, 163.

Hab. Gulf of Mexico.

13. SCAPHA PUNCTATA.

Voluta punctata, Swains. Zool. Ill. 161; Sow. Conch. Thes. 198. t. 54. f. 89, 90; Wood, Cat. Supp. f. 19.

Aulica punctata, Adams, 161.

Hab. — ?

A single imperfect specimen in the British Museum.

14. SCAPHA LUTEOSTOMA.

Voluta luteostoma, Chemn. xi. f. 1708, 1709; Sow. Conch. Thes. t. 51. f. 59.

Voluta chrysostoma, Swains.

Aulica luteostoma, Adams, 161.

Voluta imperialis, var., Dillwyn.

Hab. Indian Ocean, Chemn.

†††† *Nucleus small, regularly spiral, smooth.*

15. SCAPHA COLOCYNTHIS, Gray.

Voluta Brasiliana, Portland Cat.; Lamk.; Sow. Conch. Thes. t. 54. f. 98.

Cymbiola Brasiliana, Swains. Malac. 317; Adams, 162.

Cymbiola Colocynthis, Swains.; Adams.

Hab. Brazil.

16. SCAPHA MAGELLANICA.

Voluta ancilla, Soland. MSS.; Sow. Conch. Thes. 203. t. 54. f. 101.

Cymbiola ancilla, Swains. 317; Adams, 163.

Volutella ancilla, Gray, P. Z. 8.

Voluta spectabilis, Gmelin, S.N.

Female? *Voluta subnodosa*, Leach, Zool. Misc. i. t. 8; Sow. Conch. Thes. 203. t. 47. f. 24; Gray, Wood, Cat. Supp. f. 1.

Voluta Magellanica, Chemn., Sow. Conch. Thes. 204. t. 54. f. 99; D'Orb. Voy. v. 425.

Cymbiola magellanica, Swains. Malac. 317; Adams, 162.

Male? *Voluta gracilis*, Gray in Wood, Supp. 10. f. 2.

Voluta Ceramica β, Gmelin.

Var. β. Shell thicker, striated.

Voluta tuberculata, Gray, Wood, Cat. Supp.; Swains.; D'Orb. Voy. A. M. v. 426.

Scaphella (Alcithoë) tuberculata, Adams, 164.
Voluta Beckii, Brod. Proc. Zool. Soc. 1836, 43.
Cymbiola Beckii, Adams, 163.
Voluta festiva, D'Orb. Voy. A. M. v. 426, not Lamk.
Hab. Patagonia ; Maghellan Straits.

17. SCAPHA FERUSSACII.

Voluta Ferussacii, Donovan, Nat. Rep. ii. t. 67, 1824 ; Sow.
 Conch. Thes. 203. t. 46. f. 7.
Voluta rudis, Gray, Griff. A. K. xiii. t. 30. f. 1, 1833.
Cymbiola Ferussaci, Adams, 163.
Hab. — ?

++++ *Nucleus smooth, small, spiral, with the upper whorl rather swollen and irregular.*

18. SCAPHA PACIFICA.

Voluta Pacifica, Soland., Chemn. ; Sow. Conch. Thes. t. 48. f. 25, 26, 27.
Voluta insularis, Solander.
Scaphella (Alcithoë) Pacifica, Adams, 164.
Cymbiola Pacifica, Swains. Malac. 317.
Voluta arabica, Gmelin.
Buccinum Arabicum, Martyn.
 Var. β . *Voluta elongata*, Swains. Exot. Conch.
Voluta gracilis, Swains., Sow. Conch. Thes. t. 55. f. 117, 118.
Scaphella (Alcithoë) gracilis, Adams, 164.
 Var. γ . *Voluta fusus*, Quoy & Gaim. Voy. Astrol.
Scaphella (Alcithoë) fusus, Adams, 163, 164.
Voluta tuberculata, Sow. Conch. Thes. t. 50. f. 49, 50.
Cymbiola tuberculata, Swains. Exot. Conch. t. 29.
Hab. New Zealand.

19. SCAPHA MEGASPIRA.

Voluta megaspira, Sow. Conch. Thes. 208. t. 48. f. 31, 32.
Voluta lyriformis, Kiener, Icon. ; not Brod.
Scaphella (Alcithoë) megaspira, Adams.
Hab. — ? Mus. Cuming. Perhaps a variety of *S. pacifica*.

20. SCAPHA CONCINNA.

Voluta concinna, Brod. Proc. Zool. Soc. 1836, 43 ; Sow. Conch. Thes. t. 51. f. 66.
Voluta Lyræformis, Kiener, Icon.
Hab. — ?

21. SCAPHA FUSIFORMIS.

Voluta fusiformis, Swains. Bligh Cat. ; Sow. Conch. Thes. 208. t. 54. f. 100.
Scaphella fusiformis, Swains. Malac. 318.
Scaphella (Alcithoë) fusiformis, Adams, 164.
Hab. Van Diemen's Land.

§§ *Pillar lip with four or five strong subequal plaits in front, and some small ones behind. Operculum horny, distinct.*

4. VOLUTA.

Shell ovate, striated, covered with a thin periostraca; spire conic, nucleus small, cylindrical, regular, spiral, produced, brown; mouth elongate; inner lip parallel to outer; pillar with some (four to five) large oblique plaits in front and more transverse ones behind.

† *Outer lip thickened, reflexed; inner lip rounded.*

1. VOLUTA MUSICA, Linn.

Schum. 238; Adams, 165; Lamk.; Sow. Conch. Thes. 211.
t. 49. f. 36, 43.

Harpula musica, Swains. Malac. 317.

Voluta Thiarrella, Lamk.

Harpula Thiarrella, Sow. Malac. 317.

Voluta carneolata, Lamk.

Harpula carneolata, Sow. Malac. 317.

Voluta guineaica, Lamk.

Harpula guineaica, Swains. Malac. 317.

Voluta virescens β, Dillwyn, R. S.

Voluta laevigata, Lamk.

Harpula laevigata, Swains. Malac. 317.

? *Voluta nodulosa*, Lamk.

Harpula nodulosa, Swains. Malac. 317.

Voluta sulcata, Lamk.

Harpula sulcata, Swains. Malac. 317; Sow. Conch. Thes. 212.
t. 53. f. 87.

Voluta plicata, Dillwyn.

Hab. Jamaica; St. Vincent's.

2. VOLUTA EBRÆA.

Voluta ebræa, Linn.; Schum. N. S. 238; Adams, 165; Sow. Conch. Thes. 211. t. 54. f. 95, 96, 97.

Harpula Hebræa, Swains. Malac. 317.

Hab. Indian Ocean.

†† *Outer lip thickened, reflexed on the edge; inner lip thickened, compressed.*

3. VOLUTA POLYZONALIS, Lamk.

Harpula polyzonalis, Swains. Malac. 317; Sow. Conch. Thes. 212.
t. 52. f. 77, 78.

Voluta virescens, Soland.

Murex Cantinelosus, Mus. Gevers.

Voluta fulva, Lamk.

Harpula fulva, Swains. Malac. 317.

Voluta chlorosina, Lamk.

Var. ? β. *Voluta Pusio*, Swains.; Gray, Wood, Cat. Supp. f. 9;
Sow. Conch. Thes. 213. t. 55. f. 119.

Hab. — ? Guinea, *Humphreys*.

††† *Outer lip rounded, not reflexed on the edge.*

4. *VOLUTA VEXILLUM.*

Voluta vexillum, Chemn.; Sow. Conch. Thes. 210. t. 50. f. 54, 55, 56.

Harpula vexillum, Swains. Malac. 317; Adams, 165.

Voluta arausiaca, Solander.

Murex arausiacus, Mus. Gevers.

Hab. China; Amboina.

5. *VOLUTA LAPPONICA.*

Voluta lapponica, Linn.

Voluta indica, Sow. Conch. Thes. 210. t. 51. f. 68, 69, 70.

Harpula lapponica, Swains. Malac. 317; Adams, 165.

Hab. Indian Ocean; China.

5. *FULGORARIA.*

Shell ovate, fusiform, striated and costated; spire conical; nucleus small, spiral; aperture elongate; inner lip slightly dilated; pillar with a central thickening, covered with many irregular oblique plaits; canal rather produced in front.

Operculum —? Animal —? Teeth —?

1. *FULGORARIA CHINENSIS*, Schum. N. S. 242.

Voluta fulminata, Lamk.; Sow. Conch. Thes. 209. t. 50. f. 51, 52, 53.

Harpula fulminata, Swains. Malac. 318.

Voluta rupestris, Gmelin, Dillwyn.

Fulguraria fulgura, Adams.

Murex fulgora, Martini, iii. f. 841, 942.

Hab. China; Japan.

§§§ *Front of the pillar with two or three small oblique plaits, and generally some small ones behind them.*

6. *LYRIA.*

Shell fusiform, longitudinally plaited; spire conic; aperture ovate; pillar-lip with numerous small plaits behind the two larger front ones.

Operculum —? Teeth —?

† *Aperture ovate; outer lip moderate, not toothed within; inner lip nearly smooth behind.*

1. *LYRIA LYRÆFORMIS*, Adams, 167.

Voluta lyræformis, Brod. Zool. Journ. iii. 83. t. 3. f. 3; Sow. Conch. Thes. 217. t. 49. f. 45, 46.

Mitra lyræformis, Swains. Zool. Illust. t. 54.

Harpula lyriformis, Swains. Malac. 318.

Hab. East coast of Africa.

2. *LYRIA MITRIFORMIS*, Adams, 167.

Voluta mitriformis, Lamk.; Sow. Conch. Thes. 216. t. 52. f. 81, 82; t. 55. f. 109.

Voluta multicostata, Brod. Zool. Journ. iii. t. 3. f. 2.

Harpula mitraeformis, Swains. Malac. 318.

Hab. Australia; Java?

3. *LYRIA NUCLEUS*, Adams, 167.

Voluta Nucleus, Lamk.; Sow. Conch. Thes. 218. t. 55. f. 116.

Voluta Perdicina, Schubert & Wagner.

Voluta harpa, Wood, Cat. Suppl. 11. f. 26.

Harpula Nucleus, Swains. Malac. 318.

Hab. Australia.

4. *LYRIA FESTIVA*, Gray.

With a black spot on the front of the pillar, and another at the hinder part of the inner lip near the suture.

Voluta festiva, Lamk.; Sow. Conch. Thes. 218. t. 52. f. 79, 80, from Lamk. specimen, not D'Orb.

Cymbiola festiva, Swains. Malac. 317; Adams, 163.

Hab. East coast of Africa.

†† *Aperture ovate; outer lip moderate, simple, without any internal rib; inner lip with numerous small grooves.*

5. *LYRIA COSTATA*, Gray.

Voluta costata, Swains. Journ. Sci. xvii. 33; Sow. Conch. Thes. 215. t. 52. f. 71, 72.

Voluta lyrata, Humph. MSS.; Sow. Tank. Cat. n. 2140.

Lyria lyrata, Adams, 167.

Voluta Anna, Lesson, Zool. Illust.

Harpula Harpa, Swains. Exot. Conch.

Hab. Madagascar?

6. *LYRIA DELESSERTIANA*, Adams, 167.

Voluta Delessertiana, Petit, Mag. Zool. 1842, t. 52; Sow. Conch. Thes. 216. t. 52. f. 73, 74.

Hab. North coast of Madagascar, at Nosse-Bé.

††† *Aperture narrow; outer lip thickened externally with a convex varix and a strong internal central rib; inner lip smooth.*
Enæta.

7. *LYRIA (ENÆTA) HARPA*, Gray.

Voluta Harpa, Barnes, Ann. Lyc. N. York, i. 139. t. 9. f. 4; Sow. Conch. Thes. 215. t. 55. f. 114.

Lyria (Enæta) harpa, Adams, 167.

Hab. Peru.

8. *LYRIA (ENÆTA) CYLLENIFORMIS*.

Voluta Cylleniformis, Sow. Conch. Thes. 214. t. 55. f. 112, 113.

Lyria (Enæta) cylleniformis, Adams.

Hab. —? Mus. W. Metcalf, Esq.

The shell is strongly spirally striated and costated.

9. *LYRIA* (*ENÆTA*) *GUILDINGII*.*Voluta Guildingii*, Sow. Conch. Thes. 214. t. 55. f. 110, 111.*Lyria* (*Enæta*) *Guildingii*, Adams.*Hab.* St. Vincent's.10. *LYRIA* (*ENÆTA*) *CUMINGII*.*Voluta Cumingii*, Brod. Proc. Zool. Soc. 1832-33; Sow. Conch. Thes. 213. t. 55. f. 105, 106, 107.*Lyria* (*Enæta*) *Cumingii*, Adams.*Hab.* Central America; San Salvador; Gulf of Fonseca.7. *CALLIPARA*.

Shell oblong, subcylindrical; spire short, nucleus small; mouth linear; inner lip —; pillar with two small plaits in front. Animal —? Operculum —?

1. *CALLIPARA BULLATA*, Gray.*Voluta bullata*, Swains. Zool. Ill. ii. t. 15; Sow. Conch. Thes. 206. t. 53. f. 88; Adams, Gen. Moll. t. 17. f. 6.*Harpula bullata*, Swains. Malac. 318.*Hab.* Cape of Good Hope; Algoa Bay.

B. *Mantle lobes produced and partly covering the shell; inner lip produced over the body whorl. Pillar-folds: 4-5, large, distinct, oblique.*

8. *VOLUTELLA*.

Shell fusiform, smooth, more or less covered with a glassy coat (often artificially removed in cabinet specimens); spire conic, nucleus small or moderate, spiral; aperture ovate elongate, inner lip expanded, reflexed; mantle produced on the left side. Teeth —? Operculum none.

† *Mantle lobes largely expanded, entirely covering the spire, which is often covered with a callous deposit.*

1. *VOLUTELLA ANGULATA*, D'Orb.*Voluta angulata*, Swains. Exot. Conch. t. 3, 4; Malac. 317; Sow. Conch. Thes. 202. t. 47. f. 13, 14; Wood, Cat. Supp. f. 21.*Voluta Dufresni*, Donovan, Nat. Rep. ii. t. 67, 1824.*Voluta narisa*, Wagner.*Zidona angulata*, Adams, 161.*Hab.* West coast of South America; Patagonia.

†† *Mantle lobes moderately expanded, covering the lower side of the spire, and leaving a callous band on the suture of the upper side; spire often crowned.*

2. *VOLUTELLA SCAPHA*, Gray, P. Z. S.*Voluta Scapha*, Gmelin; Sow. Conch. Thes. t. 46. f. 12, t. 48. f. 35.*Aulica Scapha*, Adams, Gen. Moll. 161.*Voluta nobilis*, Soland.*Hab.* China? Australia.

3. VOLUTELLA IMPERIALIS, Gray.

Voluta imperialis, Solander, Lamk., Sow. Conch. Thes. t. 54. f. 102.

Voluta Vespertilio, var., Born.

Hab. Philippine Islands; China.

4. VOLUTELLA CYMBIOLA, Gray.

Voluta Cymbiola, Chemn. x. f. 1385, 1386; Sow. Conch. Thes. t. 51. f. 75, 76.

Voluta ducalis, var. C, Lamk.

Voluta flammula, Goodall, Wood, Cat. Supp. f. 5.

Melo (Ausoba) Cymbiola, Adams, Gen. Moll. 160.

β. ? *Voluta Corona*, Chemn. x. f. 1387, 1388, cop. Sow. Conch. Thes. t. 55. f. 120, 121.

Voluta ducalis, var. ? Lamk.

Voluta Æthiopica, var. γ, Gmelin.

Hab. Amboina.

5. VOLUTELLA SOPHIA, Gray.

Voluta Sophia, Gray, Ann. N. H. ; in Stokes, N. Australia.

Hab. Australia, Endeavour Straits.

6. VOLUTELLA VOLVACEA, Gray.

Voluta flavicans, Gmelin.

Voluta Scrofa, Solander.

Voluta Volva, Chemn.

Voluta volvacea, Lamk. ; Sow. Conch. Thes. 195. t. 46. f. 3, 4; t. 51. f. 60.

Voluta modesta, Wood, Cat. Supp. f. 24.

Hab. Australia ; Port Essington.

††† *Mantle lobes moderately expanded, not covering the spire ;
suture simple ; spire not crowned.*

7. VOLUTELLA PAPILLOSA, Gray.

Voluta papillosa, Swains. Bligh Cat. ; Sow. Conch. Thes. 207. t. 48. f. 30.

Scaphella papillosa, Swains. Malac. 328.

Scaphella (Alciithoë) papillosa, Adams, 164.

Hab. Australia ? ; Van Diemen's Land ; Tiger Islands ?

8. VOLUTELLA FULGETRUM.

Voluta fulgetrum, Sow. Tank. Cat. t. 4, 5 ; Conch. Thes. 207. t. 47. f. 33, 34 ; Gray, Wood, Cat. Supp. f. 3.

Scaphella (Alciithoë) fulgetrum, Adams, 164.

Hab. Australia ; Port Lincoln ; Torres Straits.

II. *The following genus has linear, acute teeth, with a narrow, angularly diverging base ; the mantle enclosed ? ; inner lip of shell*

defined; spire conic, nucleus small, regularly spiral. Operculum none. Animal oviparous.

9. AMORIA.

Shell fusiform, polished; spire conic, nucleus small, spiral; suture of whorls with a callous edge; aperture elongate; pillar with five oblique plaits in front.

† Spire smooth.

1. AMORIA TURNERI, Gray.

Voluta Turneri, Gray, Griffith A. K. t. 40. f. 1.

Voluta pallida, Gray, Griffith A. K. t. 30. f. 4; Sow. Conch. Thes. 196. t. 53. f. 91-94.

Scaphella Turneri, Adams, 164.

Hab. Australia; Port Essington.

2. AMORIA RETICULATA.

Voluta reticulata, Reeve, Sow. Conch. Thes. 197. t. 49. f. 47, 48.

Scaphella reticulata, Adams, 164.

Hab. Australia.

3. AMORIA UNDULATA, Gray.

Voluta undulata, Lamk., Sow. Conch. Thes. 196. t. 48. f. 28, 29.

Voluta strangulata, Muhlfeld.

Scaphella undulata, Swains. Malac. 328.

Voluta fluctuata, Solander.

Hab. Australia; Van Diemen's Land.

4. AMORIA MACULATA.

Voluta maculata, Swains. Exot. Conch. t. 38; Sow. Conch. Thes. 196. t. 53. f. 85, 86.

Scaphella maculata, Adams, 163.

Hab. Australia.

5. AMORIA ZEBRA.

Voluta zebra, Leach, Zool. Misc. i. t. 12. f. 1, 1814; Sow. Conch. Thes. 195. t. 53. f. 84, 1822.

Marginella radiata, Lamk.

Scaphella zebra, Adams, 164.

Hab. Australia.

†† Spire nodulose.

6. AMORIA LINEATA.

Voluta lineata, Leach, Zool. Misc. i. t. 12. f. 2.

Voluta zebra, var., Dillwyn, Sow. Conch. Thes. 195. t. 53. f. 83.

Hab. North-east coast of Australia.

7. AMORIA ? MARMORATA.

Voluta marmorata, Swains., Sow. Conch. Thes. t. 44. f. 8; Wood, Cat. Supp. f. 20.

Aulica marmorata, Adams, 161.

Hab. Australia.

There is a shell which has been described as *Volutolites abyssicola* by Messrs. Adams and Reeves, Voy. Samarang; Adams, Gen. Moll. t. 18. f. 8; found near the Cape of Good Hope; but it is very doubtful if it is not more nearly related to *Cassia* than *Voluta*; for the pillar lip is only marked with numerous faint rudimentary or obsolete plaits, and the shell is costately variced and deeply striated.

In the above list great attention has been paid to the country inhabited by the species, and no special habitat has been given unless specimens have been received directly from the locality recorded.

2. NOTE ON THE SIXTEEN SPECIES OF TEXAN BIRDS* NAMED BY MR. GIRAUD OF NEW YORK, IN 1841. BY PHILIP LUTLEY SCLATER, M.A.

1. *ICTERUS AUDUBONII*, Giraud (no plate), is *Psarocolius melanocephalus*, Wagl. Isis, 1829, p. 750. A good figure and interesting account of this fine species is given by Mr. Cassin in his new work on the birds of California, Texas, Oregon, &c. pt. 5. p. 137. pl. xxi.

2. *MUSCICAPA TEXENSIS*, Giraud, pl. 1. This seems very like *Elania cayennensis* (Linn.), (which is included by Mr. Swainson in his Synopsis of the Birds of Mexico,) though rather larger in size.

3. *MUSCICAPA LAWRENCEII*, Giraud, pl. 2. fig. 1.

4. *MUSCICAPA FULVIFRONS*, Giraud, pl. 2. fig. 2.

5. *SYLVIA HALSEII*, Giraud, pl. 3. fig. 1. This and the two preceding species I do not recognise.

6. *MUSCICAPA DERHAMII*, Giraud, pl. 3. fig. 2, is *Muscicapa vulnerata*, Wagl. Isis, 1831, p. 520; *Setophaga vulnerata*, Bp. Consp. p. 313.

7. *MUSCICAPA BELLI*, Giraud, pl. 4. fig. 1. This bird I believe to be *Sylvia chrysophrys*, Licht. in Mus. Berol.; *Myiodiactes chrysophrys*, Licht. Nomencl. p. 32; *Basileuterus chrysophrys*, Bp. Consp. p. 314. But Mr. Giraud's name has many years' precedence, and it will therefore stand as *Basileuterus Belli* (Giraud).

8. *PARUS LEUCOTIS*, Giraud, pl. 4. fig. 2, is without doubt *Setophaga rubra*, Sw. Phil. Mag. 1827, p. 368, and has other prior synonyms.

9. *FRINGILLA TEXENSIS*, Giraud, pl. 5. fig. 1, is *Chrysomitris mexicana* (Sw.); *Carduelis mexicana*, Sw. Phil. Mag. 1827, p. 435.

* Descriptions of sixteen new species of North American birds, collected in Texas, 1838, described in the 'Annals of the New York Lyceum of Nat. Hist.' by Jacob P. Giraud, Jun.—New York, 1841, 1 vol. fol.

10. *PIPERA GALERICULATA*, Giraud, pl. 5. fig. 2=*Euphonia elegantissima* (Bp.); *Pipra elegantissima*, Bp. Pr. Z. S. 1837, p. 112, and has other synonyms.

11. *MUSCICAPA LEUCOMUS*, Giraud, pl. 6. fig. 1, is *Setophaga picta*, Sw. Zool. Ill. n. s. pl. 3.

12. *MUSCICAPA BRASIERI*, Giraud, pl. 6. fig. 2, seems to be the same as *Basileuterus culicivorus*, Bp. Consp. p. 313; *Sylvia culicivora*, Licht. in Mus. Berol., which in that case must be called *Basileuterus Brasieri* (Giraud).

13. *MUSCICAPA RUBRIFRONS*, Giraud, pl. 7. fig. 1. This very pretty bird is named in Bonaparte's Consp. p. 312, *Cardellina amicta*, Dubus; and a reference is given to that author's 'Esquisses Ornithologiques,' 1850, t. 25, which, unless I am much mistaken, is still unpublished. Be that as it may, Mr. Giraud's name has many years' priority, and the bird will stand as *Cardellina rubrifrons* (Giraud).

14. *SYLVIA OLIVACEA*, Giraud, pl. 7. fig. 2, is *Sylvia taniata*, Dubus, Bull. Ac. Brux. xiv. part 2. p. 104; Rev. Zool. 1848, p. 245. Mr. Giraud's name has the priority.

15. *CERTHIA ALBIFRONS*, Giraud, pl. 8, is *Salpinctes mexicanus*, Bp. Consp. p. 224; *Thryothorus mexicanus*, Sw. Zool. Ill. n. s. pl. 11.

16. *ALAUDA MINOR*, Giraud (no plate), is an *Otocorys*, probably the same as Wagler's *Alauda chrysolaema*, Isis, 1831, p. 530; *Otocorys chrysolaema*, Bp. Consp. p. 246. But there is much confusion at present among the American, as among the Old-World species of this genus.

I have thought it worth while to give the previous list of the Texan birds described by Mr. Giraud, and some remarks on their synonymy, as his book appears to be very little known on this side of the Atlantic. The only copy I have seen is that in the Society's Library, to which it was presented by the author. It will be observed that by far the greater portion of the species have been also noticed by European naturalists, though in some cases subsequently to Mr. Giraud's publication of them.

3. ON A NEW SPECIES OF THE GENUS *TODIROSTRUM* OF LESSON. BY PHILIP LUTLEY SCLATER, M.A.

(Aves, Pl. LXXXIV.)

TODIROSTRUM NIGRICEPS. Pl. LXXXIV. fig. 1.

T. supra flavo-olivaceum: alis caudaque nigris; rectricibus et remigibus primariis stricte, secundariis autem et alarum tectricibus latius flavescente limbatis: pileo cum nucha et capitis lateribus nigris: subtus flavum; gutture et crasso albis: rostro pedibusque nigris.

Long. tota 3·4, alae 1·5, caudae 1·1.

Hab. Santa Martha in Nov. Grenada.

De Lafresnaye has given an account of the species of this peculiar South American genus of Tyrants in the 'Revue Zoologique' for 1846, p. 360. Bonaparte in his 'Conspectus' has rather extended the list; but his 4th and 5th species from Desmarest seem rather doubtful, and the *Muscicapa diops* of Temminck is, I believe, quite incorrectly stated to be identical with Hartlaub's *Todirostrum granadense*, and does not belong to this genus. There is also little doubt that *Todus melanocephalus*, Spix, is the same as *Todus cinereus*, Linn., and the first and third species of the Conspectus are therefore coequal. The latest additions to this genus are :—

1. *T. ruficeps*, Kp. in these Proceedings, 1851, p. 52 = *T. multicolor*, Strickl. Cont. Orn. 1852, pl. 85. fig. 2.—(*Todirostrum pectorale*, Kp. of the same page does not differ from Hartlaub's *granadense*.)
2. *T. chrysocrotaphum*, Strickl. Cont. Orn. 1850, p. 48. pl. 49.
3. *T. striaticolle*, Lafr. Rev. et Mag. de Zool. 1853, p. 58.
4. *T. fumifrons*, Hartl. Journ. f. Orn. 1853, p. 35; and
5. *T. rufilatum*, Hartl. l. c. 1855, p. 98.

The present elegant species I cannot identify with any of those previously described. It is a typical *Todirostrum*, and may be placed near *T. cinereum*, the type of the genus, from which it is easily distinguished by its pure black head, yellowish-olive back, and white throat. I obtained the only example of it I have yet seen from the MM. Verreaux, by whom it was received along with many other rare and valuable species from Santa Martha, on the north coast of New Grenada.

Mr. Gould has specimens of the *Todirostrum spiciferum*, Lafr. (Aves, Pl. LXXXIV. fig. 2), from Chamicurros in North-east Peru. This species, with its largely-developed crest, quite reminds one of the *Muscivora regia* (Gm.).

April 10th, 1855.

Dr. Gray, F.R.S., Vice-President, in the Chair.

The following papers were read :—

1. DESCRIPTIONS OF EIGHT NEW SPECIES OF BIRDS FROM SOUTH AMERICA.

BY JOHN GOULD, Esq., F.R.S. ETC.

(Aves, Pl. LXXXIII.)

Before describing the following birds, all of which are in my own collection, I would remark, that I have submitted them to the in-

of Mr. P. L. Sclater, who has paid much attention to South American birds, and who pronounces them new to science; I therefore embrace the earliest opportunity of placing them upon record.

1. *CAMPYLORHYNCHUS HYPOSTICTUS*, Gould.

General hue of the upper surface brown, the feathers edged with greyish-brown, producing a somewhat spotted appearance; from above each eye, down the side of the neck, an obscure streak of buffy-white; upper tail-coverts dark brown, fringed with reddish-brown; along the margins of the primaries a series of dark brown dots on a light brown ground; tail brown, with lighter edges dotted with dark brown like the primaries; under surface greyish-white, with a streak of light brown down the centre of each rectrix, small on the throat, gradually increasing on the shoulders, and assuming the form of bars on the flanks; under tail-coverts buff, centro-wings dark brown; irides red; bill light horn-colour feet olive-brown.

Total length, $8\frac{1}{2}$ inches; bill, 1; wing, $3\frac{1}{2}$; tail, 3; tarsus, 1.

Hab. River Ucayali in Peru.

Remark.—This species is very closely allied to *C. maculipennis* Spix, but differs in being of a rather larger size, having a somewhat more curved bill, a more uniformly brown upper surface, a greater number and larger size of the brown markings on the under surface, which, moreover, extend on to the sides of the neck and throat.

2. *CHAMÆA NOBILIS*, Gould.

Head very dark brown suffused with white, the throat and neck crossed by a broad black band near the base of the bill; under surface buffy-white on the centre feathers, and the sides of the neck and on the lateral ones; lores brownish-grey; the feathers of the breast broadly and the feathers of the wings narrowly bordered on the inner side; on the flanks the latter hue increases to a broad black band; a lanceolate stripe of the white down the centre of the back; tail-coverts buff, speckled with brown; a streak of buff commencing a little above the eye, and extending downwards as far as the base of the bill; bill black; feet brownish-brown.

Total length, 9 inches; bill, 1; wing, $3\frac{1}{2}$; tail, 3; tarsus, 1.

Hab. Chamæa in the district of...

Remark.—This is the most common of the species of its genus; it is very common in the district of Chamæa, and its tail with some few white feathers, is very characteristic. It offers the following characters: the under surface of the wings is bordered on the inner side; the feathers of the breast are broadly bordered on the inner side; the feathers of the back are lanceolate; the tail-coverts are buff, speckled with brown; a streak of buff commences a little above the eye, and extends downwards as far as the base of the bill; bill black; feet brownish-brown.

3. *FORMICARIA INTERMEDIA*, Gould.

Head above and sides of the neck brown, the throat and neck crossed by a broad black band near the base of the bill; under surface buffy-white on the centre feathers, and the sides of the neck and on the lateral ones; lores brownish-grey; the feathers of the breast broadly and the feathers of the wings narrowly bordered on the inner side; on the flanks the latter hue increases to a broad black band; a lanceolate stripe of the white down the centre of the back; tail-coverts buff, speckled with brown; a streak of buff commencing a little above the eye, and extending downwards as far as the base of the bill; bill black; feet brownish-brown.

chestnut; upper surface and wings rich brown; central primaries edged at the base with yellowish-brown; base of the inner web of the primaries and secondaries golden, showing conspicuously on the under surface, but not perceptible on the upper; the outer covert at the shoulder with a streak of ochreous-yellow along the margin of its outer web; tail brown at the base, gradually deepening into black at the tip; throat, neck and breast sooty-black; abdomen and under tail-coverts fuliginous-brown, assuming an olive tint on the flanks; irides brown; bill black; feet dark brown.

Total length, 7 inches; bill, $\frac{1}{4}$; wing, $3\frac{3}{8}$; tail, $2\frac{1}{4}$; tarsi, $1\frac{1}{8}$.

Hab. Chamicurros, on the eastern side of Peru.

Remark.—About the same size and nearly allied to *F. Cayennensis*, but may be at once distinguished from that species by the bar of black on the forehead.

4. FORMICARIUS ERYTHROPTERUS, Gould.

Head, upper and under surface and the tail black; feathers of the shoulders and mantle fringed with grey, giving it a scale-like appearance; those of the back fringed in a similar manner, but so narrowly as to be scarcely apparent; tail-coverts black, edged with rusty-red; extreme edge of the shoulder white; wing-coverts black, tipped with dark rust-red, forming first a narrow bar of red, and then a broad one of black; primaries rusty-red, largely tipped with black; secondaries rusty-red at the base, then black and tipped with rusty-red, the extent of the red increasing as the feathers approach the body; orbits naked and apparently red; bill black; feet fleshy-brown.

Total length, $6\frac{1}{2}$ inches; bill, $\frac{1}{8}$; wing, $3\frac{1}{2}$; tail, $2\frac{1}{2}$; tarsi, $\frac{3}{4}$.

Hab. Interior of Demerara.

Remark.—This is a very fine species. The specimen above described, which is the only one I have seen, is in my own collection.

5. SCHISTOCHLAMYS SPECULIGERA, Gould.

Head, neck, breast, back, wings and tail black; base of the third, fourth and succeeding primaries white, forming a small conspicuous patch in the centre of the wing; lower part of the back, rump and upper tail-coverts grey; under surface of the wing, abdomen and under tail-coverts white; flanks grey, with a few black feathers interspersed on the sides of the chest; irides red; bill, legs and feet greenish.

Total length, $6\frac{1}{2}$ inches; bill, $\frac{3}{4}$; wing, 3; tail, 3; tarsi, $\frac{1}{4}$.

Hab. River Ucayali in Peru.

6. THAMNOPHILUS CORVINUS, Gould.

The entire plumage deep black with the exception of the shoulders, on which is a broad mark of white; bill black; feet dark olive.

Total length, 7 inches; bill, $1\frac{1}{8}$; wing, $3\frac{3}{8}$; tail, $2\frac{1}{4}$; tarsi, $1\frac{1}{4}$.

Hab. River Ucayali in Peru.

7. THAMNOPHILUS MELANURUS, Gould. (Pl. LXXXIII).

Male.—Crown and sides of the head, crest, back, lesser wing-

coverts and tail, black; the wing-coverts tipped with white; remainder of the wing blackish-brown; throat and all the under surface white; bill black, becoming lighter at the base; feet olive-brown.

Total length, $8\frac{1}{2}$ inches; bill, $1\frac{1}{4}$; wing, $3\frac{1}{2}$; tail, $3\frac{1}{2}$; tarsi, $1\frac{1}{4}$.

Female.—Crown of the head, crest, upper surface of the body, wings and tail, chestnut; throat and chest white, passing into the mingled grey and sandy-red of the flanks; feathers clothing the thighs rusty-red tipped with white; bill blackish-brown; feet olive-brown.

Hab. River Ucayali in Peru; I have also received examples from Bogota. I must remark, however, that the specimens from the latter locality are somewhat smaller than those from Peru.

8. *THAMNOPHILUS HYPERYTHRUS*, Gould.

Crown and sides of the head, all the upper surface and tail, slaty-black; wings brownish-black, with a spot of white at the tip of each of the coverts, forming three semicircular rows across the wing; chin, breast and abdomen rich dark chestnut-red, gradually blending on the flanks and vent into the dark hue of the upper surface; bill black; feet olive-brown.

Total length, 7 inches; bill, 1; wing, $3\frac{1}{2}$; tail, $2\frac{1}{2}$; tarsi, 1.

Hab. Chamicurros in Peru.

Remark.—I believe the above to be the description of a female.

2. NOTES ON THE HABITS OF SOME INDIAN BIRDS. BY LIEUT. BURGESS. PART IX.

GENUS ARDEA.

Subgenus EGRETTE (Swainson).

ARDEA CABOGA. CATTLE HERON.

This active little Heron is abundant in the Deccan, and, as its name implies, is a constant attendant on cattle, running about amongst them, and picking off the flies that settle on them. I give the following from my note-book on their habits:—"Towards the end of November I observed a number of the common small White Heron feeding near some cattle, and the same day twenty or thirty others, and there were probably more feeding in fields of the toor plant; they appeared to be picking up food from the ground, and were in constant motion, frequently taking short flights from one part of the field to the other. I observed the same birds next morning sitting on a banian tree within the walls of a village; they quite whitened the top of the tree with their numbers.

"1st May, 1848.—Observed that the small White Heron has at this season of the year the fawn-coloured neck, and also that the long feathers falling over the breast are fawn-coloured.

"12th May.—Saw numbers of the small White Heron feeding amongst the sheep and along the grass plain at Khoonthephi.

"18th May.—Observed a flock of fifty-nine small White Herons in a ploughed field picking up the worms and insects brought out by last night's heavy rain; several of them were without the fawn-colour on the neck, head and breast."

"8th May, 1849.—Saw five or six of the small White Heron feeding amongst cattle. They keep close to the animals whilst feeding, and I saw one evidently picking the flies off a bullock; all these had more or less of the buff-colour on the neck. It is extremely amusing to observe these birds chasing flies, their long neck stretched out as they follow every turn and twist of the fly, which is seized immediately it has settled."

The Cattle Heron breeds during the month of April, building in tall trees. The nest is composed of sticks, and contains four eggs of a pale greenish-blue colour, $1\frac{2}{10}$ in. in length by $1\frac{5}{10}$ in. in width. I obtained eleven eggs from one tree on which there were twenty nests. I do not know if it has been satisfactorily determined whether both sexes assume the buff head and neck during the breeding season.

Subgenus NYCTICORAX.

ARDEA NYCTICORAX. NIGHT HERON.

Is a tolerably common bird in the Upper Deccan, but from its habit of roosting during the day in thick lofty trees, which it leaves for the streams after dusk, is not often observed. Its harsh grating cry is heard in the early dawn as it returns to its hiding-places. I made several attempts to obtain its nest and eggs, but without success, neither could I learn its time of breeding; however, I shot a young bird on 3rd December, with some down remaining on its head, which circumstance leads me to believe that they do not breed at the same time as others of the Heron tribe. Dr. Jerdon says, "it breeds on palm and other trees, many nests together." The Night Heron of England, identical I believe with that of India, "builds in trees," says Mr. Yarrell, "and lays four pale greenish-blue eggs, rather more than 2 in. in length by $1\frac{1}{2}$ in. in breadth."

Genus PLATALEA.

PLATALEA LEUCORODIA. WHITE SPOONBILL.

I have seen flocks of these birds on the river Godavery, and occasionally on the smaller streams. They breed during the month of April, building in tall trees on the border of a stream. I append a note on the subject:—"18th April, 1848. Found the White Spoonbill breeding in a peepul tree beside a stream. The nest was not, like those of the species of *Tantalus* and *Ibis*, built on the top of the tree, but on the outside branches, about two-thirds from the ground; it was composed of sticks, and appeared small for so large a bird. It contained four eggs of a white colour, spotted with pale red, of much the same size as those of the *Tantalus leucocephalus*." The egg is $2\frac{4}{10}$ in. in length, by rather more than $1\frac{1}{10}$ in.

in breadth. The gizzard of the male bird, which I shot rising from the nest whence the eggs were taken, was of a strong and rough texture, much like that of a fowl; it contained some bright yellow substance, a few small stones, a seed, and a few small particles of grass. Although the Spoonbill does not build its nest in the same situation as the *Tantalus* or *Ibis*, I quite agree with Dr. Jerdon that the Spoonbill shows more affinity to the Ibis than to the Herons, from the size and colouring of its eggs; and I believe that the more the study of oology is taken up, the more clearly will it be shown that birds may be nearly as well classed by the number and colour of their eggs and their mode of nidification, as by their external form and internal organization. The egg is white, with a belt of light red spots at the larger end.

Genus CICONIA (Briss.).

CICONIA LEUCOCEPHALA (Jerdon). WHITE-NECKED STORK.

I have but seldom met with this handsomely-marked bird, but I was fortunate enough to find it in its breeding haunts, and to secure its eggs. On the 7th March 1850, I found a pair of these Storks breeding in rather a low peepul tree; the nest was composed of sticks, and contained four white eggs, nearly $2\frac{5}{10}$ in. in length, by nearly $1\frac{2}{10}$ in. in breadth. On the same tree a Black Vulture (*Vultur ponticerianus*) had also built its nest, containing one egg. In February I found young birds; when hatched, the beak and bare skin of the face are of a dull greenish-black, irides brown; the body is covered with light brownish fawn-coloured down, legs and feet dull brownish-orange. On one tree were two nests, each containing two young. The nests were composed of sticks, and built near the top of the tree, a tall Indian fig, the stem of which was partly within the walls of a village. These birds, I was informed, breed in the same tree every year.

Genus TANTALUS (L.).

TANTALUS LEUCOCEPHALUS. PELICAN IBIS.

The Pelican Ibis, as it is called by Dr. Jerdon, is a common bird in the Deccan, frequenting rivers and tanks, and feeding, I believe, chiefly on fish. Its large size renders it remarkable, particularly during the breeding season, when the back and scapulars attain their particularly rich rosy tint. These birds are social, feeding in flocks. I was told by the natives of a village close to a tank frequented by them, and close to one of their breeding places, that when they fish in the tank they walk in the shallow water in line, driving the fish before them. In another village, about ten miles from the Godavery River, where there are a great number of large banian trees both outside and inside the walls, I found a community of these birds, which had built their nests on them, probably to the number of fifty. The trees inside the walls were as thickly

covered with nests as those outside, and the birds, which appeared docile and tame, did not mind the noise of the people passing beneath them. At the time that I visited the village, the young birds were all well-fledged, and most of them able to fly. The village people informed me that the old birds move off to the river in the very early dawn, and having caught a sufficient supply for their young, return about eight or nine o'clock. A second expedition is made during the afternoon. Some idea of the quantity of fish caught by these birds may be gathered from what the people told me, that quantities of fine fish were dropped by the old birds when feeding their young, and were eaten by them. A young bird of this species which I shot in Scinde, disgorged a large quantity of small eels. This Ibis breeds during the month of February. The nest is composed of small sticks, and is placed at the top of the trees. If there are many on the same tree, they are placed pretty close together. They lay three or four eggs, of a dull opake white, nearly $2\frac{1}{8}$ in. in length, by rather more than $1\frac{1}{8}$ in. in width. The young birds are able to fly by the month of May. I kept a young bird which had dropped from the nest and broken its wing in my garden for three or four months. It was most gentle and quiet, occasionally only snapping its strong beak at any person it did not like. In a short time it recognized the person who fed it, and whenever he made his appearance it would walk towards him, uttering a piteous cry, flapping its long wings and bowing its head towards him. It was a most ludicrous sight, which many came to see. It was fed on fresh fish, and would not touch any that were at all tainted. Another young bird which I also kept, would devour the bodies of birds brought in for stuffing, and did not appear at all particular as to the quality of its food. The stomach of an old bird contained a grassy substance, the remains of fish, and what appeared to be the claw of a small crab. I give a description of a young bird taken on 20th April. The beak dark lead-brown, darkest at the base, which is very thick; the skin on the face and forehead the same blackish lead-colour; the feathers on the head brownish-grey; the feathers on the neck of an ashy-brown, mixed with down. Shoulders ashy, with light brown edges; scapulars much the same, with much lighter ash edges; the centres of the feathers darkest in colour; lesser wing-coverts brownish-black, with an ashy tinge and light ashy edges; larger coverts dark greyish-black; outer webs tipped with whitish ash-colour, and inner webs tinged with the same colour on the edges. Tertials much the same colour as the greater coverts, but tinged with rose-colour. Primaries and secondaries black, with green reflections; back beautiful pale rose-colour; upper tail-coverts dusky grey; tail-feathers twelve, black, with bright green reflections. The breast, belly and sides covered with beautiful white down, interspersed on the breast with some dark ash-grey feathers, and on the sides with white, tinged with delicate rose-colour; the whole of the back is also covered with beautiful down. This bird was evidently a nestling, the first feathers having scarcely grown enough to cover the body.

Genus IBIS.

IBIS PAPILLOSA (Temm.). WARTY-HEADED IBIS.

This Ibis is more common than the Black-headed, and is fond of open places, as well as the sandy shores of the larger streams and rivers. They are seen in flocks in the open country, picking up insects; the stomach of one which I shot contained nothing but the heads, legs, and wing-cases of locusts; that of a second was full of large grasshoppers, and a lizard; that of a third was filled with the *chrysalides* ? of butterflies. At the approach of evening the Warty Ibis retires to thick trees to roost, uttering its loud and discordant cry. It breeds during the months of February, March, April, May and June, laying as many as three, and probably four eggs, of a pale bluish-white, slightly streaked and spotted with pale brown, $2\frac{1}{16}$ in. in length, by nearly $1\frac{1}{16}$ in. in width. I found the nest of this Ibis built on the top of a peepul tree (a species of Banian), and containing three young birds, in the month of March.

April 24, 1855.

John Gould, Esq., F.R.S., in the Chair.

The following paper was read :—

1. ON SOME NEW OR LITTLE KNOWN SPECIES OF BIRDS IN THE
DERBY MUSEUM AT LIVERPOOL.

By PHILIP LUTLEY SCLATER, M.A.

(Aves, Pl. LXXXV.—LXXXVIII.)

The zoological collection of the late Earl of Derby, now at Liverpool, contains one of the largest and finest series of birds at present in existence, many of the examples being valuable not only for their rarity, but also as types of species described long ago by Latham in his 'General History' and other works, and which are hardly to be recognized without examination of the original specimens.

Mr. Thomas Moore, the present Curator, is busily engaged in arranging this mass of materials, and affords every facility to those who are anxious to inspect any of the objects committed to his care. Among the birds I have had an opportunity of examining there during a recent short visit are the following, which I venture to characterize as new.

1. CONIROSTRUM FERRUGINEIVENTRE, Sclater. (Pl. LXXXV.)

C. cærulescenti-schistaceum, pileo et alis caudaque intus nigricantibus: superciliis latis et elongatis albis: subtus intense ferrugineum aut ferrugineo-rufum.

Long. tota 4·9, alæ 2·75, caudæ 2·0.

Hab. in Bolivia.

This is a typical *Conirostrum*, and quite distinct, I think, from any species hitherto described. The members of this genus with which I am at present acquainted are—

1. *CONIROSTRUM CINEREUM* (Lafr. and d'Orb.); D'Orb. Voy. Ois. pl. 59. fig. 1. From Tacna in Peru and Sicasica in Bolivia.

2. *CONIROSTRUM RUFUM*, Lafr. Mag. de Zool. 1843. *Dacnis rufo-cinerea*, Bp. Atti 6^a Riun. Sc. It. 1845, p. 404, et Consp. p. 401. From Bogota.

3. *CONIROSTRUM SITTICOLOR*, Lafr. Rev. Zool. 1840, p. 102. *C. bicolor*, Less.; Gray's Gen. pl. 34. From Bogota.

4. *CONIROSTRUM ALBIFRONS*, Lafr. R. Z. 1842, p. 301; Mag. de Zool. 1843, Ois. t. 35 (from which, I believe, *C. atrocyaneum*, Lafr. R. Z. 1848, p. 9, and *C. cæruleifrons*, Lafr. R. Z. 1842, p. 302, only differ in age or sex). From Bogota.

Conirostrum superciliosum of Hartlaub, R. Z. 1844, p. 215, and Bp. Consp. p. 402. sp. 5, is a true *Sylvicola* of Swainson, the same as *Parula mexicana*, Bp. Consp. p. 310, and has of course nothing to do with these birds.

The only other species that have been referred to this genus, as far as I am aware, are *Conirostrum ornatum*, Townshend, Ann. Lyc. New York, 1851, p. 112, pl. 5. fig. 1, from Texas (the same as *Ægithalus flaviceps* of Sundeval, according to Dr. Hartlaub), and the *C. fuscum* and *colombianum* of Lesson, Descr. d. Mamm. et Ois. pp. 273 and 274, none of which I have as yet recognized.

2. *SYNALLAXIS ERYTHROTHORAX*, Sclater. (Pl. LXXXVI.)

S. fuscus, olivaceo-tinctus, capite obscuriore: gutture nigro-cinereo: alis extus, nisi parte apicali, tectricibus subalaribus et vitta lata pectorali rufo-castaneis: ventre medio cinerascete, lateribus brunnescenti-olivaceis: cauda brunnea: rostro nigro: pedibus brunneis.

Long. tota 5·3, alæ 2·3, caudæ 2·5.

Hab. in America Centrali; Coban et Honduras.

Of this *Synallaxis*, which seems different from all other members of the genus that I am acquainted with, there is a specimen in the Derby Museum procured at Coban by Delattre in 1843. The British Museum contains an example from Honduras, and I have a single skin in my own collection purchased in Paris, which I believe to be from the same locality. The occurrence of species of this group north of the Isthmus of Panama seems hitherto unnoticed, except by the Prince Charles Bonaparte, in a list of a Guatemala collection of birds in these Proceedings for 1837, p. 118, in which he includes the *Synallaxis cinerascens* of Temminck (Pl. Col. 227. fig. 3). But the characters there given do not at all agree with Temminck's bird, and would seem more applicable to the present species. Besides, the true *Synallaxis cinerascens* is said to be from Brazil, and is not likely to occur also in Guatemala.

In my specimen of the present species the throat is slightly speckled with whitish.

3. *RAMPHOCÆNUS CINEREIVENTRIS*, Sclater. (Pl. LXXXVII.)

R. olivaceo-brunneus; capitis lateribus rufis, spatio postoculari nigro: alis extus brunnescentibus: gutture albo, nigro-cinerascente striato: abdomine cinerascete, medialiter albescentiore, lateraliter autem olivascetior: cauda nigricanti-fusca: rostri mandibula superiore nigrescente, hujus autem apice et mandibula inferiore albidis.

Long. tota 4·0, alæ 2·0, caudæ 1·3.

Hab. in rep. Novæ Grenadæ, Pasto.

A third species of this peculiar genus, beautifully intermediate in colouring as in locality between the *Ramphocænus melanurus* of Brazil and the *rufiventris* of Central America. When I say a third species, I am perhaps doing an injustice to M. Lesson, who has already described a third and a fourth. But I have never seen the *Ramphocæni trinitatis** and *viridis*†, and indeed they are hardly likely to be recognized again from such meagre descriptions.

The *Ramphocænus cinereiventris*, of which there is only one example in the Derby Museum, was procured at Pasto, in the mountains of New Grenada, by the indefatigable Delattre. It is a rather shorter-billed bird than the other two to which I have compared it. Like *R. rufiventris*, it has the sides of the head rufous, but differs in showing a well-marked postocular spot. It is also striated on the throat like that species, but has no tinge of rufous on the abdomen, which is darkish cinereous. The tail of the specimen, I regret to say, is not quite perfect, but there is no appearance of the white markings which are the distinguishing characteristic of the Guatemalan bird.

The Derby Museum contains examples of *R. rufiventris* from Coban and Panama, and also specimens of *R. melanurus*. The latter species appears to extend from the Amazon, where Mr. Wallace collected specimens in the neighbourhood of Para, to South Brazil, where Prince Maximilian of Neuwied notices its occurrence under the name of *Troglodytes gladiator*, Beit. iii. p. 751.

4. *CYPHORINUS ALBIGULARIS*, Sclater. (Pl. LXXXVIII.)

C. intense rufo-brunneus: alis extus obsolete nigro-fasciatis; cauda nigra, brunneo fasciata: capitis lateribus nigris; superciliis posticis et gutture toto pure albis: abdomine crissoque nigris, fasciis minutis albidis transvittatis: rostro nigro, tomis pallidis: pedibus nigris.

Long. tota 5·75, alæ 2·7, caudæ 2·1.

Hab. in Isthmo Panama.

This fine large typical *Cyphorinus*, distinguishable by its pure white throat and dark closely-banded under plumage, is also due to the

* Lesson, Rev. Zool. 1839, p. 42. *R. pileo rufe: dorso et alis brunneo-rufis: corpore infra niveo, lateribus griseis.*

† Lesson, Traité d'Orn. p. 377. *Vert-olivâtre en dessus, jaune en dessous!*

researches of M. Delattre, by whom it was brought from the Isthmus of Panama. The only species I can find which resembles it in some degree is *Cyphorinus leucostictus*, Cab. Orn. Notiz. in Wiegman. Archiv, 1844, p. 206; Schomb. Reise, iii. p. 673. sp. 37, from Mexico and Guiana; but that would appear to be a much smaller bird, and has the under parts from the chin to the belly white, with the sides and crissum reddish-brown.

Among the rare types in the Derby Museum is Mr. Eyton's *Dendrexetastes capitoides* (Cont. Orn. 1851, p. 76). This does not seem to me different from M. de Lafresnaye's *Dendrocolaptes temmincki* (Rev. et Mag. de Zool. 1851, p. 154. pl. 4), named about the same time, but I think the latter term has a slight precedence in point of date, and the bird will therefore stand as *Dendrexetastes temmincki*, if thought worthy of continuing to rank as a separate genus. The Derby Museum specimen is, to judge by its make, decidedly a Cayenne skin. The *Dendrocolaptes temmincki* in the Leyden Museum is said to be from Bogota.

Upon examining Dr. Kaup's *Psaris fraseri*, of these Proceedings, 1851, p. 47, I found it the same as *Tityra albitorques*, Du Bus, Bull. Ac. Brux. 1847, xiv. pt. 2. p. 104; and his *Psaris parinus*, ib. p. 48, seems to me very closely allied to, if not identical with, *Pachyrhamphus atricapillus* (Gm.), Pl. Enl. 687. fig. 1.

I can also confirm what Dr. Hartlaub has said in Wiegmann's Archiv, 1854, that *Todirostrum pectorale*, Kp., of the same paper is *T. granadense*, Hartl., *T. ruficeps*, Kp. = *T. multicolor*, Strickl., and *Setophaga flammea*, Kp. = *S. intermedia*, Hartl. R. Z. 1853, p. 5. But in the two latter cases Dr. Kaup's names were first given, though from the long delay in publishing the Proceedings the others were first published.

When criticising other writers, it is proper also to mention my own mistakes; and I take this opportunity therefore of stating, that my *Tænioptera striaticollis* of these Proceedings, 1851, p. 193 (of which the Derby Museum contains examples), has been long ago named and figured in D'Orbigny's Voyage as *Tyrannus rufiventris*, p. 312. pl. 32. fig. 2.

May 8, 1855.

G. R. Waterhouse, Esq., in the Chair.

Mr. Gould exhibited a portion of a collection of birds formed by Mr. Hauxwell in a district lying on the eastern side of the Peruvian Andes, in the neighbourhood of the River Ucayali, one of the tributaries of the Upper Amazon. Mr. Gould observed, that the exploration of this particular district had been one of the earliest

objects of his own ornithological ambition, but that until within the last few years no naturalist had visited it. The splendid collection sent by Mr. Hauxwell, of which the birds exhibited to the Meeting formed a part, fully bore out the anticipations entertained by Mr. Gould, that when explored it would prove one of the richest and most interesting ornithological districts with which we are acquainted.

Amongst the birds exhibited were some *Cotingas*, differing from the ordinary species found in the lower countries of Brazil, and remarkable from the splendour of their colouring, together with species of *Phenicercus*, *Rhamphocelus*, &c., of the most dazzling brilliancy. As a contrast to these, Mr. Gould exhibited a series of dull-coloured *Thamnophili*, also contained in this collection, and remarked that this striking difference in the coloration of birds inhabiting the same locality was due almost entirely to their different degrees of exposure to the sun's rays; the brilliantly coloured species being inhabitants of the edges of the forests, where they fly about amongst the highest branches of the trees, whilst the others form a group of short-winged insectivorous birds, which inhabit the low scrub in the heart of the dense humid jungle, where the sun's rays can rarely, if ever, penetrate.

Mr. Gould also remarked, that the colours of the more brilliant species from the banks of the Ucayali, a district situated towards the centre of the South American continent, were far more splendid than those of the species representing them in countries nearer to the sea, and from this circumstance he took occasion to observe that birds from the central parts of continents were always more brilliantly coloured than those inhabiting insular or maritime countries. This rule applies equally to birds of the same species, the Tits of Central Europe being far brighter in colour than British specimens. Mr. Gould had observed that the like difference existed between specimens of the same species inhabiting Van Diemen's Land and the continent of Australia. He attributed this principally to the greater density and cloudiness of the atmosphere in islands, and countries bordering the sea; and in further illustration of the influence of light upon colour, he stated, that the dyers of this country are never able to produce tints equal in brilliancy to those obtained by their continental rivals, and that in England they never attempt to dye scarlets in cloudy weather.

The following papers were then read:—

1. DESCRIPTION OF A NEW SPECIES OF *RUTICILLA* FROM
ERZEROU. BY JOHN GOULD, F.R.S. ETC.

RUTICILLA ERYTHROPROCTA, Gould.

Forehead black; crown of the head clouded silvery-grey; back, shoulders, throat, chest, and the upper part of the abdomen, jet-black; lower part of the abdomen, upper and under tail-coverts dull red; tail-feathers dull red, except the two middle ones, which are

brownish-black; wings both above and beneath brownish-black; some of the secondaries slightly fringed with silvery-grey; bill and feet black.

Total length, $5\frac{1}{2}$ inches; bill, $\frac{1}{2}$; wing, $3\frac{1}{2}$; tail, $2\frac{1}{2}$; tarsi, $\frac{1}{2}$.

Hab. Erzeroum.

Remark.—Nearly allied to, and about the size of, *R. Tithys*; but differing from that species in the under surface of the shoulder being darker, and the lower part of the abdomen being red instead of greyish-white.

In my own collection.

2. NOTES ON THE BIRDS OF WESTERN INDIA.

BY LIEUT. BURGESS.

Family RALLIDÆ.

Genus FULICA, L.

FULICA ATRA. BALD COOT.

I found some of these birds breeding on the Singwa tank, situated about eighteen miles north of the station of Ahmednuggur, on 21st August, 1849. I obtained three eggs and three nestlings, which were marked as follows: head, neck, breast and back covered with bright orange-red, hair-like feathers; beak crimson, tip white; lower part of the back dark lead-colour, nearly black; near the beak the face was covered with bright scarlet pustules; irides brown; legs and feet dark lead-colour. The young birds swam with surprising rapidity. I was attracted at first by the unusual movements of the old birds, who swam backwards and forwards with great swiftness at some distance from the nest, showing great uneasiness, and when I was handling their young appeared quite distracted.

The egg is rather more than $2\frac{1}{10}$ in. in length, by nearly $1\frac{1}{10}$ in. in width, of a stone-colour, spotted with numberless small specks of brown, and some larger spots of dark brown and grey.

Family SCOLOPACIDÆ.

Genus SCOLOPAX.

Subgenus RHYNCHÆA (Cuv.).

RHYNCHÆA PICTA (Gray). PAINTED SNIPE.

I quite think that the Painted Snipe breeds in the Deccan, or at least some few of them, as I have had both male and female birds sent to me in the middle of July, which were shot near Ahmednuggur. The female was in remarkably rich and beautiful plumage. It is very probable that some breed annually in the rushy grounds bordering the large tank at Singwa.

Subgenus *SCOLOPAX*.*SCOLOPAX NEMORICOLA*. SOLITARY SNIPE of the Neilgherries.

Dr. Jerdon in his Catalogue says, "It is a rare visitant to the Neilgherries during the cold season, and has not, as far as I am aware, been killed elsewhere in the Peninsula." I believe the Snipe mentioned in the following note, which I made at Nassick, to be the same bird :—

"Solitary, or rather, a very large Snipe, shot at Nassick by Lieut. Boddam of the Engineers : a very fine specimen ; the plumage of a very dark dim colour, and the tints on the scapulars not very bright. Shot 5th January, 1847."

Family *CHARADRIADÆ*.Genus *CHARADRIUS*.*CHARADRIUS FLUVIALIS*. GOLDEN PLOVER, L.

I have never met with this Plover in the Deccan, but shot them on the sandy plains near Kurachee in Scinde. Dr. Jerdon says, that it "is but rarely met with in the Peninsula. I have only seen it on two or three occasions on the banks of large rivers on the table-land, and on grass plains near the sea-coast, usually in small flocks of five or six. I have seen specimens killed in the neighbourhood of Madras in the breeding plumage, viz. with the whole under surface of the body deep black. It therefore most probably breeds in this country."

CHARADRIUS MINOR, Wagl. LESSER RINGED PLOVER.

I believe the egg sent with this paper to be that of the Lesser Ringed Plover ; if so, this bird breeds in the Deccan in the month of April, laying its eggs on sand-banks in the middle of the larger rivers. The egg forwarded was from a sand-bank in the river Bheema. These pretty little lively birds are common in the Deccan, resorting to the beds of streams and sandy shallows and banks of rivers. They are difficult birds to shoot, being very restless, continually taking short flights, and running about with great activity along the water's edge ; their food consists of worms, small shells and grass ; they lay as many as three eggs I believe ; the eggs are deposited on the bare sand. The egg is rather more than $1\frac{1}{10}$ in. in length, by $\frac{1}{10}$ ths of an inch in width, of a rich stone colour, spotted and streaked with grey and two shades of brown.

Genus *VANELLUS*.*VANELLUS BILOBUS* (Gmel.). YELLOW WATTLED LAPWING.

I have had frequent opportunities of seeing this Lapwing on the open bare plains which it frequents, and have obtained specimens, but never to my knowledge succeeded in procuring its eggs, though

I have had the eggs of Plovers brought to me in numbers. Dr. Jerdon says, "I found the eggs of this bird on one occasion on a grass plain on the west coast in the month of September; they were of a light salmon colour with dusky spots, four in number, and laid on a slight depression of the ground." This Lapwing utters a plaintive cry when on the wing; it feeds on small beetles, white ants, &c., picking up small pieces of stone or crystal to assist the action of the gizzard.

VANELLUS GOENSIS (Lath.). RED WATTLED LAPWING.

This common Lapwing is as partial to water as the last-mentioned is to dry sandy plains; indeed I do not recollect ever to have seen it at any distance from water. It is very common in the Deccan, and may be easily recognized by its oft-repeated cry of—"Dick did *you* do it—Dick, Dick did *you* do *it*." As soon as March has well set in they pair, and the female commences laying; she generally chooses the banks of rivers and small streams. On a sand-bank in the midst of the river Bheema, one of the large rivers of the Deccan, I fell in with the nest of this bird—if a small heap of dry gravel with a hollow in it can be called a nest—it contained four eggs. During the breeding season these birds, vociferous at all times, become doubly so, acquainting every one with the fact that their nest is near. I have had their eggs brought to me as late as 19th May. On the 27th May a man brought me three young ones, apparently just released from their imprisonment; their plumage was as follows:—Irides dark hazel; wattles dark brown, nearly black; the whole body covered with down, that on the head and neck brown with spots of black; the front of the neck, breast and belly white; a black streak runs along the sides from the wing to the tail; on the nape of the neck there was a black patch, and another cravat-shaped patch of black on the fore part of the neck and throat; legs and feet dark lead colour.

This Lapwing, like many of the Sandpipers, has a curious fashion of elevating and throwing forward the head, much like the motion of bowing. It is equally active by night as by day, filling the air with its taunting cry of "Did *you* do it." If you should fire at and miss one of them, he goes off with, and his companions fly round you with the insulting cry of "Did you do it;" or, as Dr. Jerdon has it, "Pity to do it." The food of this bird consists of grass and small insects; it also picks up small pieces of crystal to help digestion. The egg varies much in size; one sent measures $1\frac{1}{8}$ in. in length, by rather more than $1\frac{1}{8}$ in. in width, of a yellow stone colour, spotted and dashed with grey and dark sepia. The egg marked 28 is of this bird.

Genus ŒDICNEMUS (Cuv.).

ŒDICNEMUS CREPITANS. THICK-KNEED PLOVER.

This bird is tolerably common amongst the stony hills and undulating grounds of the Deccan. It is more active by night than by

day, at which time its plaintive call is heard. I had for some time a young bird in my tent; during the day it used to remain quiet, but when evening began to draw on its restlessness commenced, and it used to run round and round the tent with great rapidity, uttering a single sharp querulous note. The Thick-knee feeds on small beetles and other insects, as also small particles of grass, taking down small stones to help the action of the gizzard, which is of a strong texture. They breed during the months of March and April, laying two eggs varying in colour, 2 in. in length, by rather more than $1\frac{1}{6}$ in. in width, of a stone colour, blotched and spotted with dark sepia-brown, and a few under spots of dark grey. In some eggs the blotches are more of an olive-brown.

ÆDICNEMUS RECURVIROSTRIS (Swains.).

On the 5th April, 1849, I found two young birds of what I then took to be the young of *Ædic. crepitans*, on a large sand-bank in the middle of the river Bheema. At the same time I thought it a very strange place for a bird found in dry stony places to breed in. In March 1850, I shot a specimen of *Ædicnemus recurvirostris* on the same river, some distance higher up; I therefore think it most probable that they were the young of *Ædic. recurvirostris*, and not of *Ædic. crepitans*. Had I, at the time I found them, known that the former bird was to be found on that river, I should have examined carefully the shape of the bill. The testes in the male specimen shot in March were in a turgid state. I brought away the young birds above mentioned; one was much smaller than the other, but much more active. They were both, if I remember right, covered with a greyish down. For fear of their dying through not getting proper food, I returned them to their sandy hollow the next day. The gizzard of the full-grown bird contained the bones of some small animal.

Genus TACHYDROMUS.

I believe the egg now exhibited to be that of the Courier Plover, *Tachydromus Asiaticus*. Two of them were found in a field in a slight hollow of the ground in the month of April. Of the breeding of this bird Dr. Jerdon says—"It breeds in the more retired spots during the hot weather, laying three eggs of a pale greenish-yellow colour, much blotched and spotted with black, and also with a few olive spots; they are deposited in a slight hollow." The Courier is abundant on the plains of the Deccan, frequenting sandy bare spots in flocks; they have a peculiar habit of running for a distance at great speed, then suddenly stopping and erecting the body, then starting off as before.

Subgenus GLAREOLA.

GLAREOLA ORIENTALIS (Leach).

I came across this pretty little Pratincole when shooting on a stony bank in the river Bheema. There were numbers of them

flying about like swallows, and as they mobbed me, I concluded that they had nests, but though I made most diligent search could not find any. I procured a pair of birds: the eggs in the ovaries of the female were large: the crop of the female was filled to a great size with a species of small black beetle. This occurred in the month of March.

May 22, 1855.

Dr. Gray, F.R.S., in the Chair.

The following papers were read:—

1. DESCRIPTIONS OF FOUR NEW OR LITTLE-KNOWN TANAGERS.

By PHILIP LUTLEY SCLATER, M.A.

(Aves, Pl. LXXXIX.—XCII.)

1. ARREMON ERYTHORHYNCHUS, Sclater. (Pl. LXXXIX.)

A. olivaceus: capite nigro; vitta mediali verticis, nucha cervicisque lateribus cinereis; superciliis et corpore subtus albis: torque gutturali angusta nigra: lateribus cinerascens: campterio flavo: pedibus albis: rostro elongatiore, incurvo, rubro.

Long. tota 5·8, alæ 3·0, caudæ 2·7.

Hab. in Nova Grenada, Bogota.

I have to thank Mr. Gould for allowing me to describe this new *Arremon*, which is from his collection. It is closely allied to my *Arremon spectabilis* (P. Z. S. 1854, p. 114. pl. 67) from Quixos, but may be distinguished by its more lengthened incurved and brilliant orange red-bill, and the yellow bend of the wing.

2. TACHYPHONUS XANTHOPYGIUS, Sclater. (Pl. XC.)

Tachyphonus xanthopygius, Sclater, P. Z. S. 1854, p. 158. pl. 69 (♀).

Lanio auritus, DuBus, Bull. Ac. Brux. Feb. 1855 (♂ et ♀).

♂ niger: tergo flavo: fascicula post-superciliari coccinea: carpo summo dilute flavo: tectricibus subalaribus albis.

Long. tota 6·1, alæ 3·5, caudæ 2·5.

♀ nigro-cinereus, subtus dilutior; axillis et tectricibus subalaribus albis: tergo flavo.

Hab. in Nova Grenada, Bogota.

I described the female of this fine Tanager at the meeting of this Society on the 25th of July last year. M. Parzudaki of Paris has lately received several examples of both sexes from Bogota. A pair of these passed into the hands of the Vicomte DuBus, by whom they were characterized as new in the Bulletins de l'Académie Royale

de Belgique* for February last. A male bird from the same quarter has been kindly entrusted to me for examination before being deposited in the British Museum, where the female I originally named is also to be found. I cannot agree with the Vicomte DuBus in considering this species a *Lanio*, but, after seeing the male, am the more convinced that it is a true *Tachyphonus*.

3. *TANAGRA NOTABILIS*, Jardine. (Pl. XCI.)

T. flavo-olivacea : capite undique et mento nigris, macula nuchali triangulari, a dorso linea nigra divisa, flava : alis nigris cæruleo marginatis, tectricibus autem summis dorso concoloribus : cauda nigra, margine vix cærulescente : subtus late aurantio-flava ; rostro pedibusque nigris.

Long. tota 7·2, alæ 3·7, caudæ 3·0.

Hab. in rep. Equatoriana.

Sir William Jardine has been so good as to lend me the types of this and the following species of Tanagers for examination. They were lately procured by Professor Jameson of Quito, during a botanical excursion along the eastern range of Cordilleras to the north of Quito, and are to be described with other rare birds, the product of the same or similar expeditions, in the forthcoming number of the new series of the Edinburgh New Philosophical Journal.

The present bird is a most brilliant fourth of the little section denominated *Compsocoma* by Cabanis, easily distinguished from the others by its yellow-olive back, triangular nape-spot, black chin and orange-yellow under-plumage, and may be therefore called *Compsocoma notabilis*, if that name is used generically. The other three species of this group are—(1) *Compsocoma victorini*, with its dark olive back and elongated nape-stripe, which is common in collections from Bogota ; (2) *C. sumptuosa* (Arch. du Musée Paris., vii. p. 379. pl. 23), with the back black and uropygium olivaceous, from Trans-andean Ecuador—the same locality as the present—and Peru ; and (3) *C. flavinucha*, a rare species in collections, which seems confined to Bolivia, where d'Orbigny discovered it on the eastern slope of the Andes of the province of La Paz.

4. *SALTATOR ARREMONOPS*, Jardine. (Pl. XCII.)

S. rufo-brunneus, olivaceo parum tinctus, pectore multo clariore et rubescentiore : capite toto mentoque nigris ; vitta medialis verticis et superciliari utrinque postice elongatis cum medio ventre cinereis : alis intus et cauda nigricantibus : rostro et pedibus nigris.

Long. tota 7·25, alæ 3·2, caudæ 3·5.

Hab. in rep. Equatoriana.

This peculiar Tanager in style of plumage and general habit cor-

* The article is entitled " Note sur quelques espèces inédites d'Oiseaux." The *Nemosia torquata* therein described (sp. 10) is my *Dacnis pulcherrima*, Rev. et Mag. de Zool. 1853, p. 480—(a true *Dacnis* to my mind) ; and, is not *Vireosylvia frenata*, DuBus, sp. 1, the same as *V. alticola*, Vieill.—Cassin, Birds of Cal. pl. 37. p. 221—and *Phylomanes mystacalis*, Cab. Wiegman. Arch. 1844, p. 348 ?

responds most closely with the members of the genus *Arremon*, but the bill is altogether abnormal, the upper mandible swelling in the middle and overlapping the under, as in the genus *Lanio*, though not developed into a decided hook. But the bill is much shorter, broader and deeper than in the last-named genus, and has more general resemblance to that of some of the *Saltatores*. The wings are very short, but the only skin sent belonging to a bird in moult, the comparative length of the remiges cannot be determined.

2. DESCRIPTION OF A NEW SEA ANEMONE.

By E. W. H. HOLDSWORTH, F.Z.S.

(Radiata, Pl. V.)

The species now to be described must be separated from the true *Actiniae*, and may be well placed in the genus *Scolanthus*, which was proposed by Mr. Gosse for the reception of an animal obtained by him at Weymouth, and which presented the very distinctive characters of a perforated base, and the absence of a terminal adhesive disk. A description of that species will be found in the 'Annals of Natural History' for the year 1853, p. 157. These points of difference are accompanied, as might be expected, by a variation in habits, and the members of the genus will be found living buried in mud or sand, into which they retire on being alarmed, their extraordinary powers of inversion enabling them to hide at some little distance below the surface.

SCOLANTHUS SPHÆROIDES. (Pl. V.)

This species, which I found tolerably abundant at Seaford, near Beachy Head, has, in expansion, the body lengthened and cylindrical, regularly striated longitudinally with fine transverse markings, the upper part sparingly covered with sucking-glands, not arranged in any definite order. Disk flat and even, but little exceeding the diameter of the body. Tentacula numerous, in three or four irregular series, the inner one containing from nine to twelve; these are the longest, and measure, when fully extended, about half an inch, or two-thirds of the breadth of the disk; the outer row consists of from fifty to sixty tentacula of the same slender tapering form as the inner ones, but are one-third shorter, the other series being intermediate in size and number. The body tapers a little posteriorly and terminates with a rounded base, having a distinct central perforation. When closely contracted, the two ends of the body are nearly alike, and the animal assumes the appearance of a more or less flattened sphere or bead, the resemblance to which is much increased by the presence of the terminal orifices.

The colour of the body is a dirty-white, and the upper portion is generally covered with particles of sand or mud adherent to the sucking-glands surrounding that part, and which help to conceal the animal when contracted, as is found to be the case with *Act. crassicornis*, and probably other species under similar circumstances. The mouth opens transversely, and from it very delicate white lines radiate

to the bases of the tentacula, interspersed with two or three shades of brown in the form of stripes or spots: in some specimens a circle of very pale spots with darker margins surrounds the mouth. The base of each tentaculum is very dark and is surmounted by a broad band of white or buff, the upper portion shading off to a clear pale pelucid brown, on which are three narrow distinct white rings, their breadth and the interspaces diminishing rapidly as they approach the tip. These animals are capable of assuming a great variety of shapes, and even when fully expanded sometimes elongate themselves to the extent of $1\frac{1}{2}$ inch, or contract to little more than a $\frac{1}{4}$ of an inch. They feed readily in confinement; but those that had buried themselves in the sand appeared best able to secure their prey when placed within reach, the others on the surface often tumbling over in their endeavours to get the food into a proper position for swallowing, from not having the support of the surrounding sand or mud natural to them when buried. They were all found near low water-mark, imbedded in the fine chalky mud which fills the crevices of the rocks at Seaford, their expanded disks being just level with the surface, but so nearly covered that only a faint star-like outline was visible; on being touched they instantly disappeared; and so great was their power of inversion and contraction, that on digging carefully, they were generally found about $1\frac{1}{2}$ inch deep, and having that peculiar bead-like form which has suggested the specific name of *sphaeroides*. There was usually a depth of 6 or 7 inches of mud below them, so that they could not have been fastened to the rock; and since I have had them at home, now nearly five weeks, they have not shown the least inclination to attach themselves to the gravel, or glass sides of the tank in which they are living; three of them have burrowed into some sand on which they were placed, but the others remain on the surface, and are but rarely contracted. Soft mud is probably their natural habitat, being the most easily penetrated, and I could find no traces of any of these animals in a considerable tract of sand only a few yards from the locality whence these were obtained.

June 12, 1855.

W. Yarrell, Esq., in the Chair.

The following papers were read:—

1. ON TWO NEW SPECIES OF HUMMING BIRDS.
BY JOHN GOULD, F.R.S.

I bring before the notice of the Meeting two species of beautiful Humming Birds, which I believe to be new to science: they belong to that section of the *Trochilidae* to which the generic appellation of *Heliothrix* has been given: of this form only three species have

brevicauda, (Bodd.) (Pl. Enl. 706. fig. 1), which is, however, much smaller. It is of a uniform ferruginous brown above and white below, passing into a cinereous tinge on the sides. Some brown colour is mixed with the feathers on the sides of the breast. The bill is black, the tarsi plumbeous; the thighs and the under wing-coverts brown.

2. *GRALLARIA MODESTA*. (Pl. XCIV.)

G. supra intense brunneſcenti-olivacea, alis caudaque nigricanti-brunneis olivaceo tinctis: subtus olivacea, flavescenti-albido flammulata; ventre medio flavescenti-albido: tectricibus subalaribus pallide castaneis: mandibula superiore plumbea, hujus apice et tomis et mandibula inferiore, nisi basi, albicantibus: pedibus pallide brunneis.

Long. tota 6·2, alæ 3·2, caudæ 1·8, tarsi 1·75.

This is a rather uniformly-coloured species, of which the British Museum contains a single specimen. There are indications of darker marginations to the feathers of the nape and back. The breast feathers are medially yellowish-white, broadly margined with olivaceous.

3. *CHAMÆZA MOLLISSIMA*. (Pl. XCV.)

C. supra brunneo-castanea, remigibus rectricibusque intus nigricantibus: capitis lateribus et corpore toto subtus nigris, albo dense transvittatis: uropygii plumis laxis, elongatis, densissimis: rostro Chamæzæ marginatæ simili sed minore.

Long. tota 5·75, alæ 3·2, caudæ 2·5.

This peculiar Ant-thrush, of which there is one specimen in the British Museum, has the lower back very densely feathered, the coverts reaching to within an inch of the end of the rectrices. The wings are shorter than is usual in *Chamæza*—the 4th, 5th, 6th and 7th primaries being nearly equal in length, but the 5th rather the longest; the tail rather more lengthened; the formation of the feet is much the same.

Above the colouring is of a brown chestnut, rather darker towards the tail; the sides of the head and whole under-plumage are blackish barred with white, every feather having three or more transverse white bars. A slight tinge of castaneous is intermixed, particularly on the breast.

4. *FORMICIVORA CALLINOTA*. (Pl. XCVI.)

F. olivacea; pileo summo et nucha nigris: loris, capitis lateribus, et corpore subtus ad imum pectus cinereis: abdomine pallide flavicanti-viridi: tergo læte castaneo, pennis quibusdam nigris supra marginato: alis nigris, carpo et tectricum marginibus flavis: secundariis et rectricibus olivaceo marginatis: rostro subulato, mandibula superiore nigricante, inferiore pallide plumbea: pedibus plumbeis.

Long. tota 4·0, alæ 2·0, caudæ 1·7.

This is an exceedingly pretty species of *Formicivora*, distinguished
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by the bright chestnut colouring of its lower back, above which, in the middle of the back, are a few black-tipped feathers, forming a small black patch. It must be placed next to the Brazilian *Formicivora maculata*, (Max.) (*Leptorhynchus striolatus*, Menetries, Mém. de l'Ac. St. P. 1835, pl. 10. fig. 2*), with which it agrees in form and style of plumage. A single example of it is in the British Museum.

5. *DYSITHAMNUS SEMICINEREUS*. (Pl. XCVII.)

♂ *cinereus, pileo intensiore; subtus medialiter albicantior: dorso postico et remigum marginibus cum ventre imo olivascentibus: tectricibus alarum tenuissime albo limbatis: rostro pedibusque nigris.*

♀ *olivacea, pileo rufescente: gutture medio albo, lateraliter cinerascente: ventre flavicanti-olivaceo; mandibula inferiore basi albicante.*

Long. tota 4·5, alæ 2·4, caudæ 1·6.

In this apparently new *Dysithamnus*, of which the British Museum contains several specimens, the cinereous colour in the male occupies the whole upper plumage down to the middle of the back, where it gradually passes into olive, and the whole lower plumage down to the middle of the belly, where a like colour supervenes. The middle of the body beneath is much paler. The bill is rather longer than in *D. mentalis*, but the form is otherwise the same. The genus to which this bird belongs is certainly very closely connected with *Thamnophilus*, but I doubt whether that form can be divided even as a subfamily from the South American Ant-thrushes.

6. *PYRIGLENA TYRANNINA*. (Pl. XCVIII.)

♂ *nigricanti-cinerea, carpo summo et alarum tectricum marginibus albis: plaga dorsi medii interna nivea: subtus paulo pallidior, rostro et pedibus nigris.*

♀ *pallide brunnea, rufescente tincta; abdomine toto clare rufo: mandibula inferiore, nisi apice alba.*

Long. tota 5·2, alæ 2·5, caudæ 2·25.

A series of specimens in the British Museum clearly connect the somewhat dissimilar male and female of this species, which it is difficult to place satisfactorily in any of the present established genera of this family as far as I am acquainted with them, though without doubt a member of the group, with somewhat of a Tyrannine aspect. The characteristic white patch underneath the feathers of the back is well marked in both sexes.

* M. Menetries has made this bird a second species of his genus *Leptorhynchus*, but I do not think it can be satisfactorily arranged along with the peculiar form which he has made the type of his genus; and the name *Leptorhynchus* being preoccupied, I propose to change it into *Psilorhamphus*. Type *P. guttatus*, mihi. (*Leptorhynchus guttatus*, Men. pl. 10. fig. 1.)



4. DESCRIPTIONS OF FORTY-SEVEN NEW SPECIES OF HELICEA,
FROM THE COLLECTION OF H. CUMING, ESQ.
BY DR. L. PFEIFFER.

(Mollusca, Pl. XXXI.)

1. *HELIX CHAMISSOI*, Pfr. *H. testa imperforata, sublenticulari, tenui, superne irregulariter plicata striisque concentricis sub lente decussata, parum nitida, pallide straminea; spira brevissime conoidea; anfr. 4½ vix convexiusculis, sensim accrescentibus, ultimo non descendente, medio carinato, basi sublævigato, lutescente; apertura vix obliqua, angulato-lunari; perist. simplice, recto, acuto.*

Diam. maj. 9, min. 7½, alt. 4½ mill.

Hab. Sandwich Islands.

2. *HELIX NEPOS*, Pfr. *H. testa perforata, turbinato-depressa, tenui, lævigata, nitidissima, pellucida, purpurascenti-fusca; spira magis minusve conoideo-elevata, vertice subtili, acutiusculo; sutura impressa; anfr. 5 convexiusculis, sensim accrescentibus, ultimo non descendente, basi modice convexo; apertura subverticali, late lunari; perist. simplice, recto, margine columellari subverticali, calloso, superne anguste reflexo.*

Diam. maj. 8, min. 7, alt. 5 mill.

Hab. Ceylon (Mr. Thwaites).

3. *HELIX SUBTECTA*, Pfr. *H. testa subobtectè perforata, conoidea, tenui, conferte striata, superne lineis impressis, spiralibus subgranulata, diaphana, pallide cornea; spira conoidea, apice obtusa; anfr. 6 convexiusculis, sensim accrescentibus, ultimo non descendente, periphèria compresse carinato, basi convexo, sublævigato; apertura obliqua, rotundato-lunari, subangulata, intus nitida; perist. tenui, recto, marginibus vix convergentibus, basali arcuato, ad perforationem dilatato, subadnato.*

Diam. maj. 15, min. 13½, alt. 9 mill.

Hab. Salomon's Islands.

4. *HELIX CONVEXIUSCULA*, Pfr. *H. testa perforata, globoso-turbinata, tenui, ruguloso-striata, pellucida, pallide cornea; spira cornea, apice obtusula; anfr. 5½ modice convexis, sensim accrescentibus, ultimo non descendente, periphèria obtuse carinato, basi convexo; apertura obliqua, rotundato-lunari, intus submargaritacea; perist. simplice, recto, marginibus vix convergentibus, columellari superne brevissimo reflexo.*

Diam. maj. 12, min. 10½, alt. 8½ mill.

Hab. Ceylon (Mr. Thwaites).

5. *HELIX MOZAMBICENSIS*, Pfr. *H. testa perforata, trochiformi, tenuiuscula, confertim et oblique capillaceo-striata, sericea, fusco-fulva; spira conoidea, acutiuscula; sutura submarginata; anfr. 5 convexiusculis, lente accrescentibus, ultimo medio carina*

compressa, albo munita, antice non descendente, basi convexiore; apertura diagonali, angulato-lunari; perist. simplice, acuto, margine columellari superne brevissime reflexo.

Diam. maj. 12, min. $10\frac{1}{2}$, alt. $6\frac{1}{2}$ mill.

Hab. Tette, Mozambique (Peters).

6. *HELIX TEXTRIX*, Pfr. *H. testa umbilicata, depressa, tenui, striatula et subdistanter arcuato-plicata, diaphana, vix nitida, pallide cornea, lineis angulosis rufis amœne picta; spira vix convexiuscula; anfr. 5 planiusculis, ultimo depresso, peripheria subangulato, antice non descendente, basi convexiore; umbilico conico, $\frac{1}{4}$ diametri subæquante; apertura diagonali, subtriangulato-lunari; perist. simplice, recto, margine dextro antrorsum dilatato, columellari fere verticali.*

Diam. maj. 8, min. 6, alt. $2\frac{1}{2}$ mill.

Hab. Lord Howe's Island, New Hebrides (Macgillivray).

7. *HELIX IGNAVA*, Pfr. *H. testa umbilicata, depressa, solidula, oblique rugoso-striata striisque spiralibus subregulariter decussata, parum nitida, fulvo-lutescente; spira vix convexa; anfr. fere 4 convexiusculis, ultimo subdepresso, non descendente, prope suturam impresso, basi convexiore; umbilico conico, $\frac{1}{4}$ diametri fere æquante; apertura diagonali, lunato-rotundata; perist. simplice, recto, marginibus conniventibus, columellari vix dilatato.*

Diam. maj. 7, min. $5\frac{1}{2}$, alt. 3 mill.

Hab. Lord Howe's Island, New Hebrides (Macgillivray).

8. *HELIX CÆCILIA*, Pfr. *H. testa angustissime umbilicata, depressa, tenuiuscula, conferte capillaceo-plicata, parum nitida, cerea; spira plana, medio subimmersa; anfr. $4\frac{1}{2}$ convexis, lente accrescentibus, ultimo non descendente, altiore quam lato; apertura parum obliqua, lunari; perist. simplice, recto, marginibus remotis, dextro superne leviter arcuato, tum substriato oblique descendente, columellari declivi.*

Diam. maj. $4\frac{1}{2}$, min. 4, alt. 2 mill.

Hab. Lord Howe's Island, New Hebrides (Macgillivray).

9. *HELIX MATURA*, Pfr. *H. testa umbilicata, conoideo-lenticulari, tenuiuscula, acute carinata, striatula, saturate castanea; spira breviter conoidea, vertice pallido, obtusulo; sutura carina submarginata; anfr. $5\frac{1}{2}$ vix convexiusculis, ultimo antice breviter deflexo, basi parum convexo, circa umbilicum latiusculum, conicum obsolete angulato; apertura perobliqua, subrhombea; perist. albo, margine supero recto, antrorsum arcuato, basali intus late incrassato, fere dentato, columella breviter ascendente.*

Diam. maj. 20, min. 18, alt. 8 mill.

Hab. Guadalcanar, Salomon's Islands. Pl. XXXI. fig. 10.

10. *HELIX YATESI*, Pfr. *H. testa umbilicata, conoideo-depressa, tenuiuscula, striatula et sub lente minutissime granulata, satu-*

rate castanea; spira breviter conoidea, obtusula; sutura vix impressa; anfr. $4\frac{1}{2}$ planiusculis, sensim accrescentibus, ultimo acute carinato, antice subito perdeflexo, circa umbilicum medio-crem subinflato, antice profunde et late scrobiculato; apertura subhorizontali, piriformi-elliptica, lamella parietali longa, parum flexuosa, sublibera, angustata; perist. continuo, albo, undique soluto, margine supero subexpanso, basali medio dente conico munito, tum descendente et dentibus 2 divergentibus, basi lato junctis instructo.

Diam. maj. 24, min. 22, alt. $2\frac{1}{2}$ mill.

β . Minor, fusco-cornea, umbilico paulo angustiore.

Hab. Banks of the river Solimoes, Brazils (Mr. Yates).

Plate XXXI. fig. 13, 14.

11. *BULIMUS HOLOLEUCUS*, Pfr. *B. testa imperforata, conico-ovata, tenuiuscula, striatula, nitida, subdiaphana, alba; spira convexiusculo-conica, apice obtusa; sutura anguste marginata; anfr. 5 convexiusculis, ultimo subrotundato; columella striata, vix obliqua, callosa; apertura fere diagonali, truncato-ovali, intus concolore; perist. breviter expanso, margine columellari dilatato, adnato, cum basali angulum distinctum formante.*

Long. 32, diam. 23 mill.

Hab. Philippine Islands.

12. *BULIMUS YATESI*, Pfr. *B. testa imperforata, fusiformi-oblonga, solida, laevigata, sub epidermide non nitente fusco-olivacea, fasciis nigris, maculis sagittæformibus luteis interruptis, picta; spira elongato-conica, obtusa; sutura leviter marginata; anfr. 8 convexiusculis, ultimo $\frac{2}{3}$ longitudinis vix superante, basi attenuato; columella callosa, superne valde plicata; apertura subverticali, elliptico-oblonga, basi subangulata, intus cæruleo-albida; perist. incrassato, breviter expanso, marginibus callosordide carneo junctis.*

Long. 82, diam. 32 mill.

Hab. Meobamba, Eastern Peru (Mr. Yates). Pl. XXXI. fig. 5.

13. *BULIMUS CAPILLACEUS*, Pfr. *B. testa imperforata, ovata, tenui, capillaceo-striata, fulva; spira ovato-conica, obtusissima; sutura albido-marginata, crenulata; anfr. 5 convexiusculis, ultimo inflato, $\frac{2}{3}$ longitudinis æquante, subplicato, inter plicas dense striato et striis distantibus spiralibus obsolete decussato; columella rosea, recedente, vix plicata; apertura parum obliqua, oblongo-ovali, intus fulva, antice albida; perist. roseo, incrassato, reflexiusculo-expanso, margine columellari dilatato, fornicato, adnato.*

Long. 64, diam. 37 mill.

Hab. Banks of the river Solimoes (Mr. Yates).

14. *BULIMUS BOGOTENSIS*, Pfr. *B. testa anguste umbilicata, subfusiformi-oblonga, tenuiuscula, sublævigata, nitidula, albida, fasciis subinterruptis vel strigis subangulosis nigricantibus*

pieta; spira elongato-conica, acutiuscula; anfr. 7 convexiusculis, ultimo spiram subaequante, basi attenuato, non compresso; columella saturate violacea, leviter procedente; apertura vix obliqua, oblongo-ovali; perist. tenui, undique late expanso, patente.

Long. 38, diam. 14 mill.

Hab. Santa Fé de Bogota.

15. *BULIMUS LACERTA*, Pfr. *B. testa compresso subumbilicata, fusiformi-oblonga, tenui, plicatula et striis irregularibus spirali-bus oblongo-granosa, lutescenti-albida, strigis latia, obliquis, subramosis, fuscis variegata; spira convexo-conica, acutiuscula; sutura subfilomarginata, crenulata; anfr. 5 convexiusculis, ultimo spiram paulo superante, basi attenuato; columella fusca, valide oblique torto-plicata; apertura vix obliqua, sinuato-oblonga; perist. albo, expanso et reflexiusculo, margine dextro superne arcuato, tum substricto, columellari fornicato, flexuoso.*

Long. 33, diam. 14 mill.

Hab. Para (Mr. Yates). Pl. XXXI. fig. 15.

16. *BULIMUS SACCATUS*, Pfr. *B. testa compressa umbilicata, ovato-pyramidata, tenui, leviter striatula, nitida, albida, fasciis 4-5 nigricantibus ornata; spira regulariter elongato-conica, apice acuta; anfr. 6 convexiusculis, ultimo spira brevior, rotundato, basi subsaccato, distinctius striato; columella violacea, superne levissime plicata; apertura subverticali, truncato-ovali, intus violaceo cincta; perist. pallido, dilatato, fere rectangule patente, marginibus approximatis, dextro superne perarcuato, columellari substricto.*

Long. 22, diam. 10 mill.

β. Paulo gracilior, unicolor, albido-flavidus, columella et margine interno aperturæ violaceis.

Hab. Meobamba, Eastern Peru (Mr. Yates). Pl. XXXI. fig. 2.

17. *BULIMUS PROTRACTUS*, Pfr. *B. testa profunde compressa umbilicata, oblongo-pyramidata, tenuiuscula, confertim subarcuato-striata, albido-flavescente; spira protracta, apice acutiuscula, nigricante; anfr. 7 parum convexis, ultimo spira vix brevior, antice breviter ascendente, fortius striato, basi subcompresso; columella subplicata, recedente; apertura vix obliqua, oblonga, basi effusa, intus alba vel pallide lilacina; perist. late expanso et reflexiusculo, margine columellari sinuato, per-dilatato, patente.*

Long. 30, diam. $11\frac{1}{2}$ mill.

β. Minor, anfractu ultimo subangulato, margine dextro peristomatis magis curvato.

Hab. Meobamba, Eastern Peru (Mr. Yates). Pl. XXXI. fig. 1.

18. *BULIMUS SERRATUS*, Pfr. *B. testa profunde rimata, subperforata, fusiformi, tenui, levigata, albida, strigis spadiceis*

remote serratis picta; spira conica, acutiuscula; anfr. 6 convexiusculis, ultimo spiram superante, antice subascendente, basi attenuato; columella compressa, leviter arcuata, sulco obliquo ab anfractu penultimo separata; apertura perobliqua, ampla, acuminato-ovali, intus pallide lilacea; perist. tenui, late expanso, margine columellari abrupte reflexo.

Long. 27, diam. 11 mill.

Hab. Meobamba, Eastern Peru (Mr. Yates). Pl. XXXI. fig. 6.

19. *BULIMUS MUSIVUS*, Pfr. *B. testa profunde rimata, ovato-pyramidata, tenui, sublævigata, nitida, albida, strigis latis nigricantibus, subserratis, interdum confluentibus picta; spira conica, acutiuscula; anfr. 6 planiusculis, ultimo spiram subæquante, basi saccato; columella leviter arcuata; apertura parum obliqua, ovali-oblonga, superne vix angulata, intus pallide lilacea; perist. tenui, dilatato, expanso, albo, marginibus fere contiguis, dextro superne valde curvato, columellari patulo.*

Long. 22, diam. 9½ mill.

Hab. Meobamba, Eastern Peru (Mr. Yates). Pl. XXXI. fig. 3.

20. *BULIMUS ARCUATO-STRIATUS*, Pfr. *B. testa profunde rimata, ovato-pyramidata, tenui, confertim arcuato-striata, albida, fasciis latis griseo-fuscis, strigatim interruptis, strigisque angulosis irregulariter picta; spira convexiusculo-conica, apice nigra, obtusiuscula; anfr. 6 modice convexis, ultimo spiram subæquante, antice subascendente, basi parum attenuato; columella vix plicata, subverticali; apertura parum obliqua, oblique truncato-ovali; perist. tenui, late expanso, margine dextro leviter arcuato, columellari fornicatim reflexo, patente.*

Long. 30, diam. 13 mill.

Hab. Peru.

21. *BULIMUS INCARNATUS*, Pfr. *B. testa compresse umbilicata, oblongo-conica, tenui, sublævigata, roseo-carnea, strigis spadiceis irregulariter variegata; spira elongato-conica, acutiuscula; sutura levi, pallida; anfr. 7 planiusculis, ultimo spira paulo brevior, basi subcompressa; columella compressa, substricta recedente; apertura vix obliqua, oblongo-ovali; perist. tenui, margine dextro breviter expanso, columellari late reflexo, patente.*

Long. 31, diam. 12 mill.

Hab. Venezuela.

22. *BULIMUS CUTICULA*, Pfr. *B. testa perforata, ovato-fusiformi, membranacea, striatula, haud nitente, diaphana, pallidissime cornea, fusculo punctatim strigata et niveo-punctata; spira conica, obtusula; sutura minute crenulata; anfr. 4½ convexiusculis, ultimo ¾ longitudinis formante, infra medium fascia pallida, superne fusco-marginata ornato, basi attenuato; columella subplicata, recedente; apertura parum obliqua, acumi-*

nato-oblonga; *perist. simplice, recto, margine columellari nitido, reflexo.*

Long. 28, diam. 13 mill.

Hab. Rio Janeiro.

23. *BULIMUS SINGAPORENSIS*, Pfr. *B. testa imperforata, ovato-turrita, tenuissima, lævigata, pellucida, pallide cornea, lineis fuscis longitudinalibus nonnullisque spiralibus infra medium anfractus ultimi notata; spira regulariter conica, apice acutissima; anfr. 9 convexiusculis, ultimo $\frac{1}{2}$ longitudinis paulo superante, rotundato; apertura vix obliqua, ovali; perist. simplice, recto, margine columellari subcalloso, adnato.*

Long. 8, diam. $4\frac{1}{2}$ mill.

Hab. Singapore.

24. *BULIMUS MEOBAMBENSIS*, Pfr. *B. testa imperforata, ovato-conica, solidula, confertim striata striisque spiralibus subgranulata, virenti-albida, fasciis interruptis nigris, strigis undulatis junctis et supra medium anfractuum maculis magnis nigris angulosis picta; spira conica, obtusa; anfract. $6\frac{1}{2}$ convexiusculis, ultimo $\frac{1}{2}$ longitudinis æquante, ventroso, interdum varicoso; columella compressa, albo-callosa, stricta, recedente; apertura obliqua, angulato-ovalis, intus margaritacea; perist. nigro limbato, vix expansiusculo, marginibus callo nigro-castaneo junctis.*

Long. 88, diam. 46 mill.

Hab. Meobamba, Eastern Peru (Mr. Yates).

25. *BULIMUS RECTILINEARIS*, Pfr. *B. testa subperforata, oblongo-pyramidata, tenui, levissime striatula, diaphana, albida, fasciis 3 rubicundis et 2 basalibus castaneis, albo-articulatis notata; spira elongato-conica, subrectilineari, apice aurantiaca, acutiuscula; anfr. 7 planiusculis, ultimo $\frac{1}{2}$ longitudinis paulo superante, basi rotundato; columella subverticali; apertura obliqua, ovali-elliptica; perist. simplice, recto, margine columellari fornicato-reflexo.*

Long. 24 diam. $10\frac{1}{2}$ mill.

Hab. Meobamba, Eastern Peru (Mr. Yates). Pl. XXXI. fig. 7.

26. *BULIMUS AMANDUS*, Pfr. *B. testa anguste perforata, oblongo-conica, tenui, sublævigata (sub lente exilissime spiraliter striata), diaphana, pallidissime rosea; spira elongato-conica, acutiuscula; anfr. 6 convexiusculis, ultimo spira paulo brevior, infra medium obsolete angulato, basi vix attenuato; columella arcuata, compressa; apertura obliqua, angulato-ovalis; perist. simplice, recto, acuto, margine columellari anguste et abrupte reflexo.*

Long. 30, diam. $11\frac{1}{2}$ mill.

Hab. Venezuela. Pl. XXXI. fig. 4.

27. *BULIMUS MELANACME*, Pfr. *B. testa perforata, globoso-conica, solidula, sublævigata, alba, punctis obscuris pellucidis*

raris aspersa; spira turbinata, apice acuta, nigra; anfr. 6 modice convexis, regulariter accrescentibus, ultimo spira paulo brevior, rotundato; apertura obliqua, truncato-ovali; perist. simplice, recto, margine columellari papyraceo, superne perditato, fornicatim reflexo.

Long. 17, diam. 10 mill.

Hab. Tette, Mozambique (Peters). Pl. XXXI. fig. 8.

28. *BULIMUS PETERSI*, Pfr. *B. testa umbilicata, ovato-conica, solidula, confertim plicato-striata, parum nitida, griseo et pallide corneo variegata; spira elongato-conica, apice saturate cornea, obtusa; anfr. 6½ convexis, ultimo vix striatulo, ¾ longitudinis æquante, basi juxta umbilicum mediocre, conicum subcompresso; apertura vix obliqua, oblonga; perist. simplice, recto, margine dextro leviter arcuato, columellari dilatato, patente.*

Long. 12½, diam. 6 mill.

Hab. Tette, Mozambique (Peters).

29. *BULIMUS JUVENILIS*, Pfr. *B. testa perforata, ovato-fusiformi, tenui, levissime striatula, haud nitente, pallide rubello-cornea; spira elongato-conica, apice acutiuscula; anfr. 6½ vix convexiusculis, ultimo spira paulo brevior, medio obsolete subangulato, basi attenuato; columella substricta, paululum recedente; apertura obliqua, ovali-elliptica, basi subangulata; perist. simplice, recto, margine dextro regulariter arcuato, columellari albo, nitido, sursum dilatato, fornicatim reflexo.*

Long. 20, diam. 8½ mill.

Hab. Santa Fé de Bogota.

30. *PARTULA STENOSTOMA*, Pfr. *P. testa umbilicata, dextrorsa, oblongo-conica, solidula, confertim striolata, nitida, fulva, fusco-subnebulosa, lacte castaneo bifasciata; spira elongato-conica, acutiuscula; sutura levi, albida; anfr. 5½ vix convexiusculis, ultimo spira brevior, basi subcompresso-rotundato; columella oblique procedente, superne leviter plicata; apertura parum obliqua, angusta, truncato-oblonga, callo dentiformi profundo anfractus penultimi coarctata; perist. calloso, albo, undique expanso et reflexiusculo, margine dextro superne sinuato.*

Long. 22, diam. 10½ mill.

Hab. — ?

31. *PARTULA MACGILLIVRAYI*, Pfr. *P. testa late et compressa umbilicata, conica, tenuiuscula, irregulariter striatula et sub lente striis spiralibus confertis sculpta, albida, strigis lutescentibus fasciisque obsoletis notata; spira elongato-conica, acutiuscula; anfr. 5 vix convexiusculis, ultimo spiram subæquante, antice subascendente, basi saccato; columella leviter arcuata, in fundo leviter plicata; apertura parum obliqua, truncato-oblonga; perist. albo, tenui, æqualiter subrectangule expanso.*

Long. 23, diam. 11 mill.

Hab. New Hebrides (Macgillivray).

32. *PARTULA SUTURALIS*, Pfr. *P. testa anguste perforata, oblongo-conica, tenui, spiraliter distincte striata, fulvo-lutea, strigis castaneis irregulariter picta; spira convexo-conica, acuta; sutura filo albo marginata; anfr. 5½ convexiusculis, ultimo spira vix brevior, superne suburgido, basi attenuato; columella subsimplice, fere verticali; apertura vix obliqua, truncato-oblonga; perist. albo, tenui, margine dextro anguste expanso, superne sinuato, columellari dilatato, fornicatim reflexo.*
 Long. 19, diam. 9 mill.
Hab. — ?

33. *PARTULA REPANDA*, Pfr. *P. testa compresso umbilicata, ovato-conica, solidula, sub lente minutissime spiraliter striata, parum nitente, pallide lutescente, versus apicem interdum rosea; spira conica, acutiuscula; anfr. 5 modice convexa, ultimo spiram paulo superante, medio antice subimpresso, basi saccato; columella subverticali, superne subplicata; apertura parum oblonga; perist. albido, expanso, intus calloso, margine dextro repando, intus supra medium subdentato.*
 Long. 17, diam. 9 mill.
Hab. New Hebrides.

34. *PARTULA MUCIDA*, Pfr. *P. testa perforata, ovato-conica, solidula, confertim spiraliter striata, castanea, griseo quasi mucida; spira elongato-conica, acuta; sutura levi, albida; anfr. 5 vix convexiusculis, ultimo spiram vix æquante, infra medium obsolete angulato, basi subsaccato; columella superne plicata; apertura obliqua, obauriformi; perist. carneo, rectangule æqualiter expanso, intus callo prominulo labiato.*
 Long. 17½, diam. 8½ mill.
Hab. Pacific Islands.

35. *ACHATINELLA (LEPTACHATINA) OBCLAVATA*, Pfr. *A. testa subperforata, clavæformi, tenui, vix striatula, parum nitente, pallide cornea; spira elongata, apice obtusa; sutura linea impressa, filum crenatum formante, crenata; anfr. 7½ vix convexiusculis, ultimo ⅓ longitudinis paulo superante; plica columellari obliqua, subtorta; apertura verticali, oblonga; perist. simplice, margine dextro medio antrorsum dilatato; columellari angusto, subadnato.*
 Long. 7½, diam. 3 mill.
Hab. Sandwich Islands (*Dr. Newcomb*).

36. *ACHATINELLA (AURICULELLA) CHAMISSOI*, Pfr. *A. testa subperforata, oblonga, pyramidata, solidiuscula, striis spiralibus sub lente sculpta, epidermide fusca, obsolete strigata induta; spira elongato-conica, obtusiuscula; anfr. 7½ planiusculis, ultimo ¾ longitudinis subæquante, basi subcompresso; apertura vix obliqua, auriformi; lamella parietali valida, extus deorsum ramosa; plica columellari levi, subtorta, alba; perist. albido, expansiusculo.*
 Long. 8, diam. 3½ mill.
Hab. Sandwich Islands.

37. *SPIRAXIS SUBCALLOSA*, Pfr. *Sp. testa subfusiformi-oblonga, tenui, lævigata, nitida, pellucida, lutescenti-hyalina; spira conica, obtusa; sutura distincte marginata; anfr. 5½ convexiusculis, ultimo ⅔ longitudinis fere formante, basi attenuato; columella subcallosa, leviter torta, basi subtruncata; apertura verticali, angusta, acuminato-oblonga; perist. simplice, margine dextro antrorsum arcuato.*

Long. 14, diam. 6 mill.

Hab. Venezuela.

38. *SPIRAXIS BARCLAYI*, Pfr. *Sp. testa oblonga, tenui, lævigata, cornea; spira convexo-conica, acutiuscula; sutura levi, simplice; anfr. 5 convexiusculis, penultimo magno, ultimo spira paulo brevior, basi vix attenuato; apertura verticali, acuminato-oblonga; columella oblique et leviter bistorta; perist. simplice, recto, margine dextro superne sinuato, medio subangulatim antrorsum dilatato.*

Long. 9, diam. 4 mill.

Hab. Isle of France (Sir D. Barclay).

39. *ACHATINA INÆQUALIS*, Pfr. *A. testa ovato-oblonga, tenui, strigis et flammis luteis, fulvis et castaneis irregulariter picta; spira elongato-conica, obtusa; sutura superne crenulata, in anfractu ultimo funiculo pallido crenulato munita; anfr. 7 convexiusculis, superis granulato-decussatis, ultimo spiram vix superante, subrugato, ad suturam obsolete granulato, basi subattenuato; columella leviter torta, albida, oblique truncata; apertura verticali, angulato-ovali, intus cærulescente; perist. recto, margine dextro fusco-limbato.*

Long. 78, diam. 38 mill.

Hab. Fernando Po.

40. *ACHATINA CHRYSALLIS*, Pfr. *A. testa oblongo-turrita, solidula, striatula, ad suturam linearem arcuato-plicata, pallide lutescente; spira subcylindracea, apice conica, obtusa; anfr. 10 planiusculis, ultimo ⅓ longitudinis subæquante, basi rotundato; columella callosa, basi abrupte truncata; apertura verticali, sinuato-semiovali; perist. recto, margine dextro arcuato, intus subincrassato.*

Long. 9, diam. 3½ mill.

Hab. Sandwich Islands.

41. *ACHATINA YATESI*, Pfr. *A. testa turrita, tenuiuscula, leviter striatula, diaphana, cerea; spira regulariter attenuata, obtusa; sutura profunda; anfr. 7 convexis, ultimo ¼ longitudinis vix superante, infra medium subangulato; columella arcuata, oblique distincte truncata; apertura vix obliqua, ovali-rotundata; perist. simplice, recto.*

Long. 11, diam. 3½ mill.

Hab. Meobamba, Eastern Peru (Mr. Yates).

42. *ACHATINA (GLANDINA) NYSTIANA*, Pfr. *A. testa fusiformi-oblonga, tenui, sublævigata, levissime striatula, pellucida, nitida, carnea; spira elongata, gracili, obtusa; sutura filo-marginata; anfr. 6½ convexiusculis, ultimo ¾ longitudinis subæquante, basi attenuato; columella levissime arcuata, basi breviter et horizontaliter truncata; apertura vix obliqua, ovali-elliptica; perist. simplice, tenui.*

Long. 47, diam. 12 mill.

Hab. — ?

43. *ACHATINA (GLANDINA) CONULARIS*, Pfr. *A. testa oblongo-conica, tenuiuscula, lævigata, nitida, fuscule-carnea; spira elongato-conica, obtusa; sutura filo albido marginata; anfr. 6 vix convexiusculis, ultimo spiram æquante vel paulo brevior, basi parum attenuato; columella levissime arcuata, abrupte truncata; apertura subverticali, acuminato-ovali; perist. simplice, acuto.*

Long. 23, diam. 8½ mill.

Hab. Mexico (Mr. Sallé).

44. *ACHATINA (GLANDINA) FILOSA*, Pfr. *A. testa oblonga, solida, longitudinaliter conferte filoso-plicata, pallide rosea; spira elongata, convexo-conica, obtusa; sutura subsimplice; anfr. 6 vix convexis, ultimo spiram æquante, basi subattenuato; columella levissime arcuata, rugata, ad basin aperturæ abrupte truncata; apertura subverticali, acuminato-ovali, intus saturate carnea; perist. simplice, margine dextro strictiusculo.*

Long. 39, diam. 14 mill.

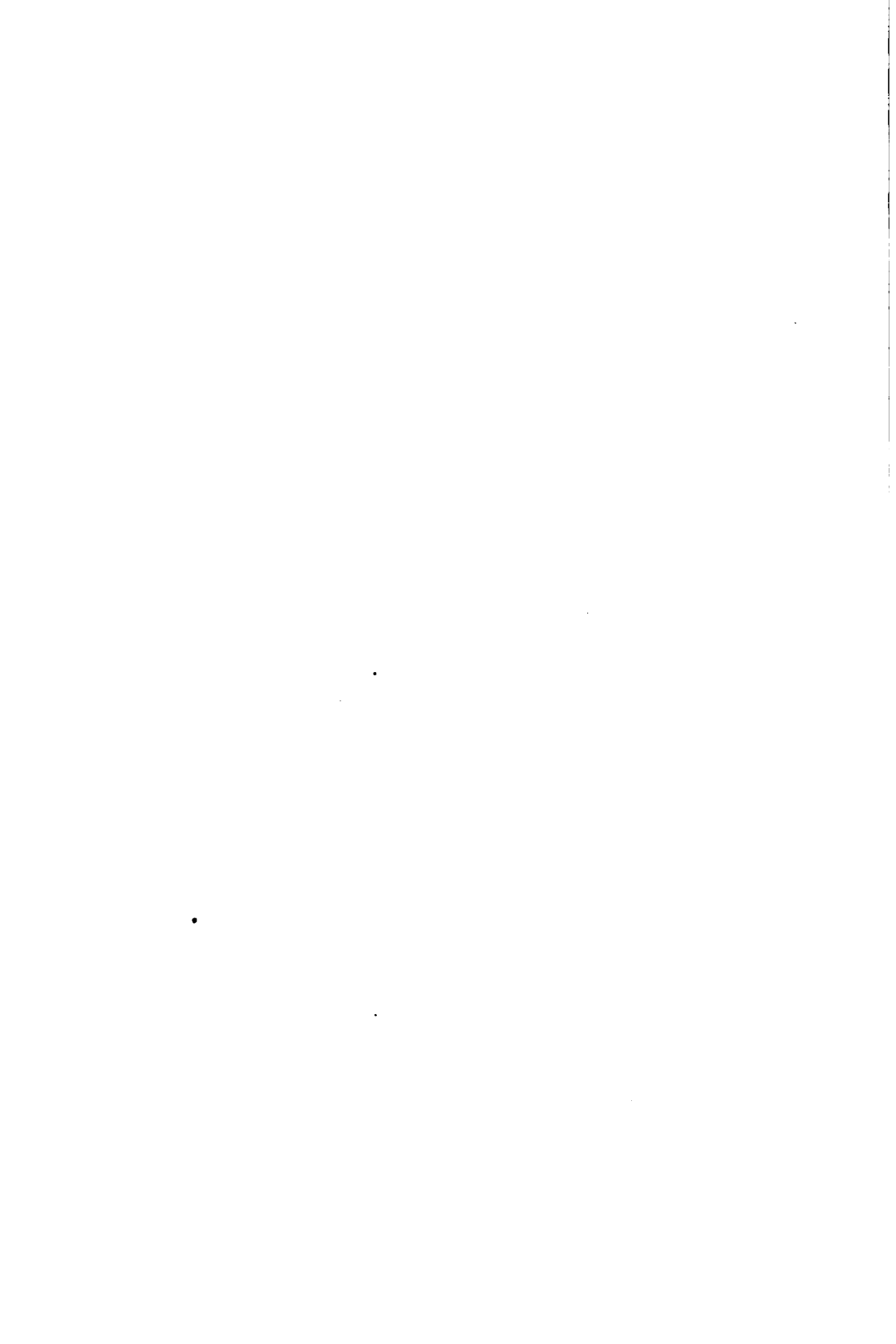
Hab. — ?

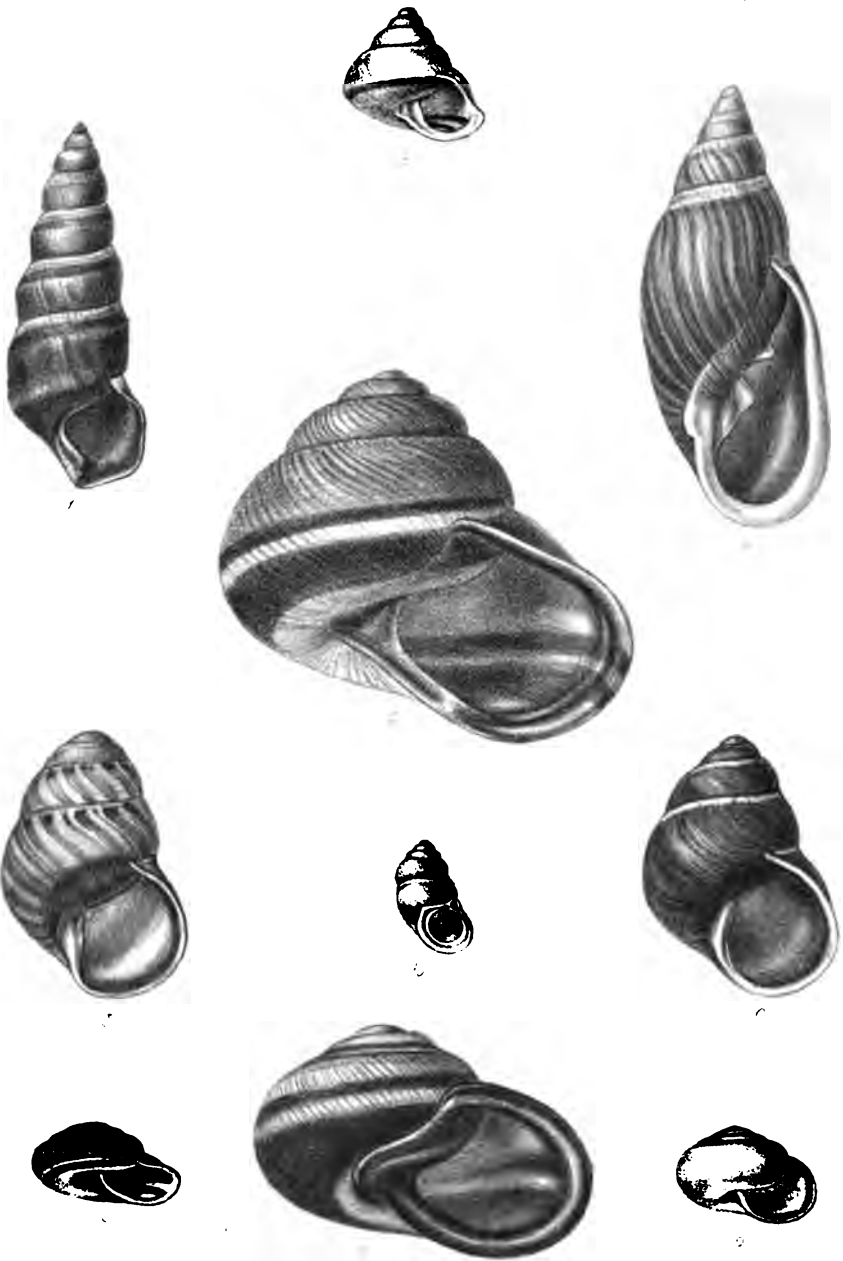
45. *ACHATINA (GLANDINA) INSIGNIS*, Pfr. *A. testa ovato-oblonga, solidula, subdistanter distincte plicata, interstitiis subtiliter decussato-granulatis, parum nitida, carnea, plicis albidis; spira elongato-conica, sursum saturatiore, apice obtusa, fuscule; sutura linea impressa marginata et denticulis regularibus eleganter sculpta; anfr. 7 convexiusculis, ultimo spiram subæquante, basi subattenuato; columella crassa, subverticali, basi late et abrupte truncata; apertura verticali, anguste elliptica, intus albida; perist. simplice.*

Long. 48, diam. 18 mill.

Hab. — ? Pl. XXXI. fig. 11, 12.

46. *ENNEA ANODON*, Pfr. *E. testa profunde rimata, oblongo-ovata, solidula, oblique distincte striata, alabastrina; spira ovata, versus apicem obtusulum sensim attenuata; anfr. 6-7 vix convexiusculis, penultimo latere aperturæ subplanato, ultimo attenuato, ¾ longitudinis formante, antico arcuatim ascendente, basi rotundato; columella superne oblique plicata; apertura verticali, truncato-ovali; perist. subincrassato, expanso, mar-*





Figures 1-10. *Helix* sp. (1-10). *Helix* sp. (1-10). *Helix* sp. (1-10). *Helix* sp. (1-10). *Helix* sp. (1-10). *Helix* sp. (1-10). *Helix* sp. (1-10). *Helix* sp. (1-10). *Helix* sp. (1-10). *Helix* sp. (1-10).

gine dextro subrependo, columellari paulo brevior, dilatato, patente.

Long. 15-17, diam. $7\frac{1}{2}$ -8 $\frac{1}{4}$ mill.

Hab. — ?

47. ENNEA REEVEANA, Pfr. *E. testa breviter rimata, cylindracea, tenuiscula, oblique distincte plicato-striata, nitida, virenti-hyalina; spira subcylindrica, apice conoideo-rotundata; sutura impressa, submarginata, ad anfr. ultimum conferte denticulata; anfr. 7, primis 2 lævigatis, sequentibus convexiusculis, ultimo $\frac{3}{4}$ longitudinis formante, antice subascendente, basi rotundato; columella oblique recedente, compressa; apertura subverticali, acuminato-ovali; perist. albo, reflexiusculo, margine dextro subrependo, columellari brevior, sursum dilatato, fere adnato.*

Long. 15, diam. 6 mill.

Hab. — ?

5. DESCRIPTIONS OF A NEW GENUS AND TWENTY-THREE NEW SPECIES OF PNEUMONOPOMA, FROM THE COLLECTION OF H. CUMING, ESQ. BY DR. L. PFEIFFER.

(Mollusca, Pl. XXXII.)

1. TROCHATELLA EXCAVATA, Pfr. *Tr. testa depresso-globosa, spiraliter levissime lirata, opaca, carnea, convexa, acute mucronata; anfr. 6 vix convexiusculis, ultimo inflato, obsoletissime subangulato; columella lata, triangulari, excavata; apertura diagonali, ampla, subsemicirculari, in fundo fusco-carnea; perist. albo, late expanso, ad columellæ angulum subrotundatum angustato.*

Diam. maj, $13\frac{1}{2}$, min. $11\frac{1}{2}$, alt. $9\frac{1}{2}$ mill.

Hab. — ?

2. HELICINA REPANDA, Pfr. *H. testa conoideo-semiglobosa, solida, levissime striatula, nitidula, lutescenti-albida, fascia 1 rubra supramediana ornata; spira convexa, subacuminata; anfr. $4\frac{1}{2}$ vix convexiusculis, ultimo antice descendente; columella brevi, simplice, callum crassum, circumscriptum retrorsum emitte; apertura diagonali, subtriangulari; perist. recto, in-crassato, margine supero repando, basali versus columellam attenuato.*

Diam. maj. 8, min. $6\frac{1}{2}$, alt. 5 mill.

Hab. — ?

3. HELICINA ZEBRIOLATA, Pfr. *H. testa subconoideo-depressa, tenui, striatula, parum nitida, strigis flexuosis rubris et albis variegata, vel rubra, albo-punctata; spira parvula, parum elata, subacuta; anfr. $4\frac{1}{2}$ planis, ultimo lato, acute carinato, basi inflato; columella brevi, simplice, callum emittente tenuem; aper-*

tura perobliqua, semiovalo-subtriangulari; perist. simplice, recto, margine basali in columellam subangulatim transeunte.

Diam. maj. $6\frac{1}{2}$, min. $5\frac{1}{2}$, alt. $3\frac{1}{2}$ mill.

Hab. Lord Howe's Island, Australian Seas (Macgillivray).

4. *HELICINA RUDIS*, Pfr. *H. testa conoideo-depressa, solidula, ruditer striatula et submalleata, filo-carinata, fulva; spira conoidea, acutiuscula; anfr. $4\frac{1}{2}$ planis, ultimo descendente, basi parum convexo; columella brevi, simplice, callum tenuem, circumscriptum retrorsum emittente; apertura diagonali, subtriangulari; perist. simplice, recto, acuto, margine basali cum columella angulum subrectum formante.*

Diam. maj. $4\frac{1}{2}$, min. $3\frac{1}{2}$, alt. 3 mill.

Hab. — ?

5. *HELIX SHANGHAIENSIS*, Pfr. *H. testa depresso conoidea, tenui, carinata, laevigata, pallide cornea, rufo-strigata; spira breviter conoidea, obtusula; anfr. 5 convexiusculis, ultimo non descendente, ad suturam et carinam subacutam pallide articulatam, basi convexiore; columella brevi, verticali, callum emittente tenuem; apertura fere diagonali, subtriangulari; perist. simplice, recto, acuto, margine basali leviter arcuato, cum columella angulum formante.*

Diam. maj. $4\frac{1}{2}$, min. 4, alt. $2\frac{1}{2}$ mill.

Hab. Shanghai, China (Mr. Fortune).

6. *HELICINA SPHÆROIDEA*, Pfr. *H. testa subglobosa, solidula, sub lente minutissime striata, parum nitente, pallide virenti-straminea; spira rotundata, subacuminata; anfr. $4\frac{1}{2}$ convexiusculis, ultimo magno, infra medium obsoletissime angulato; columella albo-callosa, recedente, basi indistincte dentata, callum emittente diffusum; apertura diagonali, late semiovali; perist. simplice, brevissime expanso, margine basali cum columella angulum subacutum formante.*

Diam. maj. 7, min. 6, alt. $5\frac{1}{2}$ mill.

Hab. Loyalty Island, Australian Seas (Macgillivray).

7. *HELICINA MERDIGERA*, Sallé MSS. *H. testa globoso-turbinata, tenui, irregulariter et subdistanter striata, sub tegumento luto rubicunda vel hyalina; spira elata, conica, acutiuscula; anfr. $5\frac{1}{2}$ convexiusculis, ultimo utrinque convexiore; columella brevi, basi extrorsum subdentata, callum emittente tenuissimum; apertura diagonali, subsemicirculari; perist. simplice, breviter expanso, margine basali sensim in denticulum columellæ abeunte.*

Diam. maj. 6, min. 5, alt. $4\frac{1}{2}$ mill.

Hab. Vera Cruz, Mexico (Sallé).

8. *HELICINA MACGILLIVRAYI*, Pfr. *H. testa subconoideo-depressa, solidula, spiraliter obsolete striata, nitidula, carnea vel pallide lilacea, indistincte fasciata; spira breviter conoidea, subacuminata; anfr. $4\frac{1}{2}$ planis, ultimo peripheria obsoletissime angulato;*

apertura perobliqua, subtriangulato-semiovali; columella brevi, callum emittente crassiusculum, sulco brevi circumscriptum; perist. simplice, breviter expanso, versus columellam attenuato.

Diam. maj. $6\frac{1}{2}$, min. $5\frac{1}{2}$, alt. 4 mill.

Hab. Isle of Pines, Australian Seas (Macgillivray).

9. *HELICINA DENTICULATA*, Pfr. *H. testa globoso-conica, solidula, oblique striata, minutissime decussata, rugis antrorsum descendentibus distantioribus sculpta, parum nitida, alba, superne late flavo-fasciata; spira convexo-conica, acuta; sutura eleganter denticulata; anfr. $5\frac{1}{2}$ vix converiusculis, ultimo peripheria subangulato, basi parum convexo; columella breviter arcuata, antrorsum dentata, superne rima brevi notata; retrorsum in callum tenuem abeunte; apertura subtriangulari-semiovali; perist. albo, angulatim patente, medio in rostrum triangulare producto.*

Diam. maj. a rostro 13, min. fere 11, alt. 9 mill.

Hab. Honduras.

10. *HELICINA TURBINELLA*, Pfr. *H. testa turbinata, solida, leviter striatula, vix nitidula, lutescente; spira conoidea, acutiuscula; anfr. $4\frac{1}{2}$ converiusculis, ultimo carinato, basi convexo; columella brevi, subverticali, basi subtruncata, callum retrorsum emittente tenuissimum; apertura diagonali, subtriangulari-semiovali; perist. albido, tenui, breviter expanso, margine basali leviter arcuato.*

Diam. maj. $4\frac{3}{4}$, min. 4, alt. 3 mill.

Hab. Sidney.

11. *CYCLOSTOMA (CYCLOTUS) GLAUCOSTOMUM*, Pfr. *C. testa umbilicata, subturbinato-depressa, solidula, striata et plicis obliquis superne irregulariter sculpta, nitida, castanea; spira brevissime conoidea, apice obtusulo, nudo; anfr. 4 convexis, rapide accrescentibus, ultimo antice dilatato, brevi minute malleato-granulato; umbilico pervio, $\frac{1}{2}$ diametri non aequante; apertura vix obliqua, subrotundata, intus cærulea, margaritacea; perist. recto, marginibus superne subangulatim junctis, columellari subincrassato, perarcuato,*

Diam. maj. 18, min. 14, alt. 9 mill.

Hab. Venezuela.

12. *CYCLOSTOMA (CYCLOTUS) SORDIDUM*, Pfr. *C. testa umbilicata, conoideo-depressa, solidula, levissime et confertim spiraliter lirata, sub epidermide decidua, fulva sordide alba; spira conoidea, mucronata; anfr. 4 convexis, celeriter accrescentibus, ultimo terete, antice vix adnato; apertura parum obliqua, subcirculari; perist. simplice, continuo, vix expansiusculo.*

Diam. maj. $7\frac{1}{2}$, min. $6\frac{1}{2}$, alt. $4\frac{1}{2}$ mill.

Hab. China.

13. *CYCLOSTOMA (CYCLOTUS) MACGILLIVRAYI*, Pfr. *C. testa umbilicata, turbinato-depressa, solida, rugoso-striata et liris*

spiralibus in anfr. ultimo evanescentibus sculpta, opaca, carneo-albida; spira convexo-conoidea, submucronata; anfr. 4½ convexiusculis, sensim accrescentibus, ultimo subdepresso, basi circa umbilicum conicum, ½ diametri fere æquantem, abrupte angulato; apertura obliqua, superne et basi subangulata; perist. continuo, obtuso, recto, ad angulum circa umbilicalem subproducto.—Operc. concavo, calcareo, arctispirali.

Diam. maj. 9, min. 7½, alt. 5 mill.

Hab. Isle of Aneiteum, New Hebrides (Macgillivray).

14. *CYCLOSTOMA (AULOPOMA) GRANDE*, Pfr. *C. testa umbilicata, depressa, solida, confertim distincte striata, sulcis spiralibus nonnullis remotis sculpta, sub epidermide nigro-fusca, sæpe fasciatim detrita, obsolete marmorata; spira brevissima conoidea, vertice subtili, acuminato, nigricante; anfr. 5 convexis, ultimo terete, basi læviore, antice breviter soluto, viz descendente; apertura obliqua, subcirculari; perist. simplice, recto.—Operc. subæspirato, anfractibus oblique valide plicatis.*

Diam. maj. 25, min. 21½, alt. 13 mill.

Hab. Ceylon (Mr. Thwaites).

15. *CYCLOSTOMA (CYCLOPHORUS) FORBESIANUM*, Pfr. *C. testa umbilicata, subdepressa, solida, liris spiralibus inæqualibus subconfertis cincta, opaca, albida vel rubella; spira parum elevata, vertice submucronato; anfr. 5 convexis, ultimo descendente, terete; umbilico conico, ½ diametri superante; apertura parum obliqua, subcirculari, intus alba vel vinosa; perist. simplice, recto, superne subdilata, breviter adnato.—Operc. pallido.*

Diam. maj. 23, min. 18, alt. 11 mill.

Hab. Lord Howe's Island; New Hebrides (Macgillivray).

16. *CYCLOSTOMA (CYCLOPHORUS) CONVEXIUSCULUM*, Pfr. *C. testa umbilicata, convexiuscula, tenuiuscula, epidermide sordide fuscescente, confertim membranaceo-plicata, ad suturam squamosa, induta; spira parum elevata, vertice subtili; anfr. 4½ modice convexis, ultimo subdepresso, basi rotundato; umbilico aperto, ½ diametri formante; apertura obliqua, subcirculari; perist. continuo, breviter adnato, simplice, recto.—Operc. corneo, indistincte arctespirato.*

Diam. maj. 6, min. 5, alt. 2½ mill.

Hab. Cape of Good Hope (Macgillivray).

17. *CYCLOSTOMA (LEPTOPOMA) BARBATUM*, Pfr. *C. testa umbilicata, depresso-turbinata, tenui, acute carinata, sub epidermide arcuato-striata, fulvo et castaneo variegata; spira turbinata, apice acuta; anfr. 5 convexiusculis, superne liris 3-4 prope carinam munitis, ultimo ad carinam pilis squamosis barbato, basi convexiore, liris 2 distantibus nonnullisque obsoletioribus subangulato; umbilico mediocri, conico; apertura fere diagonali, subcirculari; perist. duplice; interno continuo, expansiusculo, ad anfr. penul-*

timum subsinuato, externo breviter patente et reflexiusculo, superne subdilatato.

Diam. maj. 13, min. 11, alt. $6\frac{1}{4}$ mill.

β. *Major, anfr. 5, paulo depressior, umbilico paulo latiore.*

Diam. 18, alt. $8\frac{1}{4}$ mill.

γ. *Minor, anfr. 5, liris basalibus distinctioribus.*

Diam. 11, alt. 6 mill.

Hab. Borneo, Sarawak.

18. *CYCLOSTOMA (CYCLOSTOMUS?) ANNATONENSE*, Pfr. *C. testa perforata, globoso-conica, tenui, carinis pluribus periphericis acutis, lirisque compressis, confertis, vix elevatis munita, parum nitida, fusca; spira acute conica, sursum pallescente; anfr. 6 convexiusculis, ultimo ventroso; apertura vix obliqua, irregulariter ovali; perist. tenui, albido, marginibus approximatis, dextro brevissime expanso, columellari superne recedente, cum parte inferiore subangulatum juncto, angustissimo.*

Diam. maj. 8, min. $6\frac{3}{4}$, alt. 8 mill.

Hab. Isle of Aneiteum or Annaton; New Hebrides (Macgillivray).

19. *CYCLOSTOMA (CYCLOSTOMUS?) SINUATUM*, Pfr. *C. testa umbilicata, globoso-turbinata, solida, laevigata, vix nitidula, alba; spira turbinata, acutiuscula; anfr. $5\frac{1}{4}$ convexis, prope suturam liris 5 filaribus cinctis, ultimo rotundato, circa umbilicum angustum, pervium liris paulo confertioribus sculpto; apertura vix obliqua, subcirculari; perist. breviter expanso, marginibus callo subexciso junctis, dextro superne repando, fere sinuoso, columellari non latiore.*

Diam. maj. 22, min. 18, alt. 17 mill.

Hab. Madagascar?

20. *DIPLOMMATINA CHORDATA*, Pfr. *D. testa sinistrorsa, profunde rimata, subfusiformi, tenui, laevigata, costulis subdistantibus chordæformibus munita, diaphana, cereo-albida; spira ovato-conica, acuta; anfr. 7 convexis, ultimo attenuato, antice ascendente; apertura vix obliqua, subcirculari; perist. duplice, interno continuo, breviter adnato, cæterum expansiusculo, externo breviter patente.*

Long. 4, diam. 2 mill.

β. *Minor, paulo confertius chordata.*

Hab. New Zealand (Strange); var. β. Lord Howe's Island (Macgillivray).

ANALUS, Pfr., nov. gen. *Operculum tenuissimum, corneum, subarctispirum, extus concaviusculum. Testa umbilicata, pupinæformis; apertura circularis; peristoma duplex: internum continuum, externum dilatatum, ad insertionem marginis dextri canali aperto perforatum.*

21. *ANALUS BOMBYCINUS*, Pfr. *A. testa impervie umbilicata, oblonga, tenuiuscula, confertim striata, sericea, rubello-cornea;*

spira irregulari, inflata, in conum obtusulum desinente; anfr. 6 convexis, penultimo gibbo, latere aperturali subplanato, ultimo attenuato, ad suturam marginato, antice ascendente; apertura circulari, basi axin subexcedente; perist. interno calloso, adnato, esterno late expanso, reflexiusculo, marginibus superne callo junctis.

—*Operc. luteo-corneo.*

Long. 14, diam. $7\frac{1}{2}$ mill. Apert. intus fere 4 mill. diam.

β. *Minor anfr. $5\frac{1}{2}$, penultimo magis turgido.*

Long. 10, diam. vix 6 mill.

Hab. Borneo, Sarawak. Pl. XXXII. fig. 10.

22. *HYDROCENA ACUTILIRATA*, Pfr. *H. testa aperte perforata, turbinata, tenui, liris acutis, magis minusve confertis, nonnullis interdum carinaeformibus, cincta, cornea; spira conica, acuta; anfr. $5\frac{1}{2}$ convexiusculis, ultimo basi inflato; apertura obliqua, angulato-subovali; perist. simplice, subrecto, marginibus vallo tenui junctis, sinistro subangulato.*

Long. 10, diam. $6\frac{1}{2}$ mill.

Hab. Lord Howe's Island; New Hebrides (*Macgillivray*).

23. *HYDROCENA (OMPHALOTROPIS) VESTITA*, Pfr. *H. testa perforata, oblongo-conica, tenui, striata et spiraliter conferte lirata, epidermide fuscula vestita; spira pyramidata, acutiuscula; anfr. 6 planis, ultimo carina acuta infra medium, secunda circa perforationem, nonnullisque minoribus basalibus munito; apertura vix obliqua, subangulato-ovali; perist. simplice, recto, marginibus convergentibus.*—*Operc. fusco.*

Long. 5, diam. 3 mill. Ap. 2 mill. longa.

Hab. New Zealand.

6. DESCRIPTIONS OF NINE NEW SPECIES OF HELICEA, FROM MR. CUMING'S COLLECTION. BY DR. L. PFEIFFER.

(Mollusca, Pl. XXXII.)

1. *SPIRAXIS CUMINGIANA*, Pfr. *S. testa turrita, solida, sub-lavigata, nitidula, nigra; spira elongata, sursum in conum acutiusculum terminata; anfr. 8, supremis planis, capillaceo-striatis, reliquis prope suturam albo cinctam angulosis, ultimo $\frac{1}{2}$ longitudinis subaquante, superne et infra medium angulato, basi attenuato; columella lamina alba, torta, basin fere attingente, munita; apertura vix obliqua, rhombeo-ovali, intus cærulescente; perist. simplice, intus nigro-labiato.*

Long. 48, diam. 16 mill.

Hab. Kanai, Sandwich Islands (*Dr. Newcomb*). Pl. XXXII. fig. 1.

2. *BULIMUS TRAILLI*, Pfr. *B. testa imperforata, oblongo-ovata, tenuiuscula, leviter striata, nitida, nigro-castanea; spira convexo-conica, apice obtusa; sutura levi, albo-marginata; anfr. 5 con-*

versiusculus, ultimo spira vix brevior, infra medium obsoletissime angulato; columella fere stricta, subdilatata, plana; apertura obliqua, ovali, antice fusca, intus cærulescente; perist. breviter expanso, margine dextro leviter arcuato.

Long. 36, diam. 22 mill.

Hab. Palawan Passage, near Borneo (*Dr. Traill, H.E.I.C.*).
Pl. XXXII. fig. 6.

3. *BULIMUS CINEROSUS*, Pfr. *B. testa imperforata, ovoidea, solida, oblique striatula, fusca, epidermide suturate cinerea, strigatim detrita, obducta; spira convexo-conica, apice obtusa; anfr. 5 modice convexis, ultimo spira paulo brevior; columella subplana, leviter introrsum dilatata, alba; apertura obliqua, truncato-ovali, intus albida; perist. subsimplice, breviter expanso.*

Long. 36½, diam. 13 mill.

Hab. Palawan Passage, near Borneo (*Dr. Traill, H.E.I.C.*).
Pl. XXXII. fig. 5.

4. *HELIX TRAILLI*, Pfr. *H. testa umbilicata, conica, solida, oblique confertim plicata, castaneo-fulvida; spira conica, apice obtusula; anfr. 5 convexis, ultimo fascia peripherica et area lata basali lutea ornato, antice vix descendente; apertura diagonali, truncato-ovali, intus cæruleo-albida; perist. fusco, expanso et reflexiusculo, marginibus subconniventibus, columellari brevi, albo, late reflexo, umbilicum angustum fere tegente.*

Diam. maj. 54, min. 43, alt. 37 mill.

Hab. Palawan Passage, near Borneo (*Dr. Traill, H.E.I.C.*).
Pl. XXXII. fig. 4.

5. *HELIX PALAWANICA*, Pfr. *H. testa umbilicata, globoso-depressa, solida, oblique striata, striis obliquis subgranulata, pallide fulva; spira brevi, convexa; anfr. 4 convexiusculus, ultimo parum deflexo, prope suturam et supra peripheriam nigro-fasciato, infra fasciam periphericam albidam nigricante, circa umbilicum fere obiectum pallido; apertura perobliqua, rotundato-lunari, intus margaritacea, obscure fasciata; perist. incrassato, nigro, expanso et revoluta, margine columellari dilatato, fornicato-reflexo.*

Diam. maj. 43, min. 33, alt. 23 mill.

Hab. Palawan Passage, near Borneo (*Dr. Traill, H.E.I.C.*).
Pl. XXXII. fig. 7.

6. *HELIX MELEAGRIS*, Pfr. *H. testa umbilicata, convexo-depressa, tenuiuscula, subremote striata, parum nitida, superne nigro-castanea, maculis lutescentibus irregulariter aspersa; spira brevi, conoideo-convexa, obtusula; anfr. 5½ convexiusculus, ultimo antice parum descendente, periphæria rotundato, fascia pallida cincto, basi convexo, pallide corneo; umbilico conico, ½ diametri subæquante; apertura perobliqua, irregulariter lunato-rotundata; perist. subsimplice, marginibus conniventibus, dextro antrorsum*

arcuato, vix expansiusculo, basali incrassato, subreflexo, columellari brevi, parum dilatato.

Diam. maj. 19, min. 16, alt. 8 mill.

Hab. Wanderer Bay, Guadalcanar, Salomon's Islands (*Macgillivray*). Pl. XXXII. fig. 8.

7. *HELIX MIGRATORIA*, Pfr. *H. testa umbilicata, conica, tenuiuscula, oblique levissime striatula, nitidula, fulvo-lutea, saepe linea rufa ad suturam ascendente notata; spira turbinata, apice obtusula; anfr. 5 modice convexis, ultimo antice non descendente, periphæria obsolete angulato, basi convexo, sub lente spiraliter striato; apertura perobliqua, subrhombico-ovali; perist. albo, margine dextro breviter expanso, flexuoso, basali calloso, reflexo, columellari dilatato, reflexo, umbilicum angustum semitegente.*

Diam. maj. 18, min. 15, alt. 15 mill.

Hab. Wanderer Bay, Guadalcanar, Salomon's Islands (*Macgillivray*). Pl. XXXII. fig. 3.

8. *HELIX VITIENSIS*, Pfr. *H. testa perforata, subconoideo-depressa, solida, lavigata, nitida, fusco-carnea; spira conoideo-convexa, vertice subtili; sutura levi, rufo-marginata; anfr. 5½ convexiusculis, sensim accrescentibus, ultimo non descendente, supra medium obsolete angulato, basi planiore, pallidiore; apertura parum obliqua, lunari, intus margaritacea; perist. recto, marginibus vix convergentibus, columellari oblique descendente, ad perforationem leviter incrassato et reflexo.*

Diam. maj. 18, min. 16½, alt. 10 mill.

Hab. Ovalau, Feejee Islands (*Macgillivray*). Pl. XXXII. fig. 9.

9. *BULIMUS MACGILLIVRAYI*, Pfr. *B. testa umbilicata, fusiformi-oblonga, solidula, leviter striata, nitida, castaneo-fulva; spira elongato-conica, obtusiuscula; sutura levi, fascia albida vel rosea notata; anfr. 5½ parum convexis, ultimo ¼ longitudinis subæquante, infra suturam turgidulo, basi attenuato; apertura vix obliqua, angusta, acuminato-semiovali, intus margaritacea, callo nodiformi parietali et plica validissima, obliqua columelle coarctata; perist. subincrassato, breviter expanso, margine columellari dilatato, umbilicum angustum semitegente.*

Long. 59, diam. 22 mill.

Hab. Wanderer Bay, Guadalcanar, Salomon's Islands (*Macgillivray*). Pl. XXXII. fig. 2.

June 26, 1855.

Dr. Gray, F.R.S., in the Chair.

The following papers were read :—

1. DESCRIPTIONS OF SOME NEW SPECIES OF BIRDS FROM SANTA
FÉ DI BOGOTA. BY PHILIP LUTLEY SCLATER, M.A.

(Aves, Pl. XCIX.—CII.)

1. NEMOSIA ALBIGULARIS. (Pl. XCIX.)

N. nigra : dorso postico crissoque cum macula collari utrinque et plumis narium quibusdam aurantio-flavis : speculo alari albo : subtus albo pectoris et laterum plumis partim intus nigro vitatis : rostro supra nigricante, subtus carneo : pedibus nigris.

Long. tota 4·2, alæ 2·5, caudæ 1·8.

This is a close ally of *Nemosia flavicollis* (Vieill.), from which, however, it may be at once distinguished by its white throat, the yellow colour being confined to a patch on the side of the neck. The spot above the nostrils and orange tint of the yellow are other differences which serve to confirm the validity of this species. There are examples of it in the British Museum and in Mr. Gould's collection and my own.

2. PYRIGLENA ELLISIANA. (Pl. C.)

P. fusco-castanea unicolor : facie, mento et regione auriculari cum cauda nigricantibus : rostro nigro, mandibula inferiore, nisi ipsa tomia basique, alba.

Long. tota 7·0, alæ 3·3, caudæ 3·1.

The only specimen I have seen of this species was received by Lady Ellis in a collection of birds from Bogota, and presented by her to the British Museum. At the request of Mr. G. R. Gray, I have named it after the donor. The form is nearly that of *P. domicella*, but there is no sign of a white subinterscapular spot, as is general in the species of this genus. The tail-coverts are very thick. The plumage is of a nearly uniform cinnamon-brown, brighter above, and with a greenish gloss on the breast. The front, sides of the head, throat and tail are black.

3. ANTHUS BOGOTENSIS. (Pl. CI.)

A. pennis corporis superi medialiter nigris pallido cervino-brunneo late marginatis : alis intus nigris ; primariis stricte, secundariis autem et tectricibus pallido cervino-brunneo late marginatis : rectricibus nigris ; una utrinque extima, nisi pogonii interioris parte basali, tota pallide alba, brunnescente tincta ; cæteris extus et duabus mediis utrinque cervino-brunneo anguste lim-

batis : capitis lateribus et corpore toto subtus pallide cervino-brunneis, ventre crissoque albescentioribus ; pectoris lateribus et collo antico punctis paucis triangularibus nigris, quasi torquem formantibus, notatis : rostro nigro, mandibula inferiore basi flavido : pedibus validis, flavis : ungue postico valde elongato.

Long. tota 5.0, alæ 3.2, caudæ 2.3.

This is the only bird of the nearly universally distributed family of Pipits I have seen from Bogota, and appears distinct from any species previously noticed. The bill is rather larger, and the feet stronger and thicker than in the ordinary members of the genus. Above, the plumage is of the usual pale brownish fawn-colour, thickly clouded with black, caused by the feathers being broadly margined on each side with the fawn-colour. The sides of the head and under-plumage are uniform, except on the sides of the breast and across the neck, where there are small black triangular spots in the centre of some of the feathers. The under wing-coverts are pure pale buff ; the middle of the belly and crissum lighter and nearly whitish.

4. OTOCORYS PEREGRINA. (Pl. CII.)

Otocoris chrysolaimos, Bp. Att. Sc. It. 1845, p. 405 (nec Wagl.).

O. supra grisescenti-brunnea, rufo tincta ; pennis nigro variegatis : fronte, facie gulaque flavis, loris et regione auriculari et vitta transversa verticis cum plaga magna superpectoralis nigris : abdomine crissoque et tectricibus alarum inferioribus albis, pectore et lateribus rufescente griseo mixtis : alis nigricantibus ; primariis albedo, secundariis rufescente-griseo, tectricibus majoribus rufo limbatis ; tectricibus summis pure rufo-brunneis, pæne castaneis : cauda nigricante ; rectrice una utrinque extima late, secunda autem versus apicem solum et angustius albo limbata ; duabus mediis rufescente griseo utrinque late marginatis : tectricibus caudæ superioribus basi rufis : rostro nigro, mandibula inferiore basi alba : pedibus intense brunneis.

Long. tota 5.5, alæ 3.8, caudæ 2.4.

I have had an example of this bird in my possession several years, but have always considered it the same as Wagler's *O. chrysolæma*, with which it has been identified by Prince Charles Bonaparte. Having however lately obtained specimens of the Mexican species, I find the Bogota bird presents such differences as to render its specific isolation necessary. It is rather smaller than the former, the tail is shorter, the bill longer and more curved, and the back has more black upon it. But the chief peculiarity to be remarked in my specimen (which is not quite adult) is the pure red-brown colour of the upper wing-coverts, which in the Mexican bird are lighter, paler, and more pinky. There are many examples of this species in the Paris Museum, in the collection recently transmitted from Bogota by M. Lewy, the French consul there. I have no doubt fully mature individuals will exhibit still further differences.

2. DESCRIPTIONS OF THIRTY-EIGHT NEW SPECIES OF LAND-SHELLS, FROM THE COLLECTION OF H. CUMING, ESQ.
BY DR. L. PFEIFFER.

1. *HELIX RHEA*, Pfr. *H. testa subobtectae perforata, globoso-depressa, solida, striata, sulcis obliquis irregularibus profunde cicatricosa, epidermide glutinosa, fulva, castaneo strigata obducta; spira brevi, conoidea, obtusa; anfr. 5 convexis, infra suturam canaliculatam perturgidis, ultimo obsolete subangulato, periphæria albo-fasciato, basi leviter undulato-striato, subcompresso; apertura perobliqua, truncato-ovali, intus albida, nitida; perist. simplice, obtuso, margine dextro subinflexo.*

Diam. maj. 69, min. 56, alt. 37 mill.

Hab. Dingle, Province of Ilo Ilo, Island of Panay, in woods under decayed leaves.

2. *HELIX COFFEA*, Pfr. *H. testa perforata, elato-trochiformi, solidula, levissime striatula, fusca, fasciis saturatioribus et suturali alba notata; spira convexo-conica, apice nigricante, acutiuscula; anfr. 6 modice convexis, ultimo periphæria obsolete angulato, basi subplano, fusco; apertura obliqua, truncato-ovali; perist. recto, marginibus subparallelis, columellari vix incrassato, ad perforationem reflexiusculo.*

Diam. maj. 30, min. 26, alt. 24 mill.

Hab. Moluccas.

3. *HELIX LALLOËNSIS*, Pfr. *H. testa imperforata, subdepresso-globosa, tenui, striis confertis subtilissime decussata, parum nitida, alba, fasciis 2 antice nigricantibus, tum pallescentibus ornata; spira parvula, convexa; anfr. 4 rapide accrescentibus, ultimo inflato, antice vix descendente; columella tenui, compressa, subexcavata, leviter arcuata; apertura obliqua, lunato-rotundata; perist. tenui, æqualiter et mediocriter expanso.*

Diam. maj. 29-38, min. 22½-29, alt. 18-25 mill.

Hab. Lallo, Cagayan, Isle of Luzon.

4. *HELIX MILITARIS*, Pfr. *H. testa imperforata, globoso-turbinata, tenui, oblique striata et lineis minutis oblique descendentibus sculpta, nigro-castanea; spira turbinata, apice obtusa; anfr. 6½ convexis, ultimo turgido, carinato (carina antice obsolete), breviter deflexo; columella brevi, plica valida dentiformi munita; apertura perobliqua, lunato-rotundata; perist. albo, expanso et reflexo, margine dextro perarcuato, columellari fere appresso.*

Diam. maj. 47, min. 39, alt. 36 mill.

Hab. Seychelles.

5. *HELIX CAMELUS*, Pfr. *H. testa compressæ umbilicata, conoideo-campanulata, solida, striata, sub lente minutissime decussata, alba, castaneo trifasciata; spira ventrosa, sursum conoideo-attenuata; anfr. 6 modice convexis, ultimo antice vix descendente, basi subgibboso-compresso; apertura diagonali, truncato-ovali;*

columella arcuata, callosa, subtruncata; perist. albo, expanso, margine columellari dilatato, patente.

Diam. maj. 29, min. 25, alt. 26 mill.

Hab. —?

6. *HELIX FLEXUOSA*, Pfr. *H. testa umbilicata, depressa, solidula, leviter striata, nitida, castanea; spira subplana, medio vix immersa; anfr. 5 celeriter accrescentibus, convexiusculis, superne irregulariter spiraliter striatis, ultimo lato, subdepresso, antice vix descendente, basi circa umbilicum angustum, pervium non compresso; apertura obliqua, rotundato-lunari, latiore quam alta; perist. læte lilacino, expanso, margine basali declivi, flexuoso, reflexo.*

Diam. maj. 30, min. 25, alt. 11 mill.

Hab. Borneo.

7. *HELIX BICILIATA*, Pfr. *H. testa perforata, convexo-lenticulari, tenui, pellucida, cornea, oblique plicata, bicarinata, carinis pilis longis ciliatis; spira parum elata, vertice subtili; anfr. 4½ scalaribus, ultimo antice non descendente, basi vix convexo; apertura subobliqua, depresso securiformi; perist. simplice, recto, marginibus subparallelis, columellari vix reflexiusculo,*

Diam. maj. 7½, min. 6½, alt. 3½ mill.

Hab. Ceylon.

8. *HELIX LEUCOSTYLA*, Pfr. *H. testa imperforata, conoideo-semiglobosa, solida, oblique striata, sub lente minute decussata, castanea; spira convexiusculo-conica, apice obtusula; anfr. 6½ convexiusculis, lente accrescentibus, ultimo non descendente, utrinque convexo, medio carinato; columella stricta, parum obliqua, calloso-incrassata; apertura diagonali, subtetragono-lunari; perist. simplice, recto.*

Diam. maj. 21½, min. 19½, alt. 14 mill.

Hab. Mauritius Island.

9. *HELIX LUDERSI*, Pfr. *H. testa umbilicata, sublenticulari, tenuiuscula, oblique striatula, corneo-albida, fasciis angustis æqualibus rufis ornata; spira convexa, obtusa; sutura albomarginata; anfr. 5½ vix convexiusculis, lente accrescentibus, ultimo non descendente, medio carina acuta alba munito, basi convexiusculo, nitido; umbilico conico, ½ diametri subæquante; apertura diagonali, subrhombico-lunari; perist. simplice, marginibus vix convergentibus, supero recto, acuto, basali subincrassato.*

Diam. maj. 19, min. 17, alt. 7 mill.

Hab. Ovalau, Feejee Islands (Mr. Macgillivray).

10. *HELIX CONFUSA*, Pfr. *H. testa umbilicata, conoideo-semiglobosa, tenuiuscula, confertim striata et irregulariter spiraliter subsulcata, glutinosa, fulvo-lutea, castaneo-radiata; spira breviter conoidea, obtusa; anfr. 4½, ultimo lato, obsoletius striato, supra peripheriam subimpresso, antice non descendente, basi convexo,*

leviore; umbilico perspectivo, intus concolore, striato; apertura fere diagonali, truncato-ovali, intus margaritacea; perist. simplice, recto, margine columellari superne subdilatato, patente.

Diam. maj. 35, min. 28, alt. 17 mill.

Hab. Cape Upstart, Australia.

11. *HELIX ANTRORSEA*, Pfr. *H. testa umbilicata, subconica, tenui, striata et rugulis antrorsum descendantibus decussata, pellucida, corneo-albida; spira conoidea, obtusiuscula; sutura marginata; anfr. 5 convexiusculis, celeriter accrescentibus, ultimo compressis et acute carinato, superne planiusculo, antice cum carina deflexo, basi circa umbilicum angustum inflato; apertura perobliqua, lanceolato-lunari; perist. tenui, marginibus vix convergentibus, supero expanso, ad carinam subrostrato, basali perarcuato, reflexo, supra umbilicum dilatato.*

Diam. maj. 23, min. 19½, alt. 12 mill.

Hab. Haman Island.

12. *HELIX EXALTATA*, Pfr. *H. testa perforata, trochiformi, tenuiuscula, striis obliquis et spiralibus minute decussata, carinata, sericea, albida, supra carinam fusco anguste unifasciata; spira concavo-conica, elata, acutiuscula; anfr. 7 vix convexiusculis, ultimo non descendente, infra carinam acutam modice convexo; apertura parum obliqua, angulato-lunari; perist. simplice, recto, margine columellari superne reflexiusculo.*

Diam. maj. 15, min. 13½, alt. 11 mill.

Hab. Salomon's Islands.

13. *HELIX VEXILLARIS*, Pfr. *H. testa imperforata, turbinata, tenui, striata et leviter antrorsum rugato-malleata, nitidula, alba; spira turbinata, apice grisea, acutiuscula; anfr. 5 convexis, ultimo vix descendente, turgido, subangulato, basi virenti-fulvo, spiraliter striato; columella declivi, subarcuata, plana; apertura diagonali, truncato-elliptica; perist. tenui, marginibus subconvergentibus, dextro expanso et reflexiusculo, superne arcuato, basali reflexo.*

Diam. maj. 28, min. 23, alt. 22 mill.

Hab. Haman Island.

14. *HELIX FRINGILLA*, Pfr. *H. testa imperforata, conoideoglobosa, solida, oblique striata, nitida, sub epidermide lutea albida; spira convexo-conoidea, acutiuscula; anfr. 4½ parum convexis, ultimo antice subito deflexo et valde constricto, medio subcarinato, basi convexiore, spiraliter striato, centro excavato; apertura perobliqua, irregulariter subtriangulari lunari; perist. calloso, albo, reflexo, margine supero subflexuoso, basali perarcuato, prope columellam intus subdentato.*

Diam. maj. 23, min. 20½, alt. 15 mill.

Hab. Monda Island.

15. *HELIX MOTACILLA*, Pfr. *H. testa anguste umbilicata, conoideo-subglobosa, tenui, striatula striolisque antrorsum descendantibus sub-*

decussata, fusco-lutea, ad suturam et peripheriam albo fasciata; spira conoidea, obtusula; anfr. $4\frac{1}{2}$ convexis, ultimo inflato, antice non descendente, medio subcarinato; apertura diagonalis, subtriangulari-lunari; perist. roseo-albo, marginibus distantibus, supero flexuoso, expanso, basali reflexo, leviter arcuato, juxta columellarem subforficatim leviter dentato.

Diam. maj. 20, min. 18, alt. $12\frac{1}{2}$ mill.

Hab. Eddystone Island.

16. *HELIX SACHALENSIS*, Pfr. *H. testa anguste umbilicata, conoidea, tenui, striata, striolis antrorsum descendentibus subdecussata, fulvescenti-albida, fascia alba peripherica, angusta castanea supra eam et nonnullis fuscis ornata; spira conoidea; anfr. $4\frac{1}{2}$ modice convexis, ultimo non descendente, medio subcarinato; apertura diagonalis, rotundato-lunari; perist. tenui, marginibus subconniventibus, supero arcuato, expanso, basali reflexo, ad umbilicum dilatato, forficato.*

Diam. maj. $19\frac{1}{2}$, min. $15\frac{1}{2}$, alt. 12 mill.

Hab. Sachala Island.

17. *HELIX HEROICA*, Pfr. *H. testa umbilicata, convexo-depressa, solida, irregulariter albo-plicata, interstitiis corneis; spira parum elevata, convexa, apice obtusa, livida; anfr. $4\frac{1}{2}$ convexiusculis, lente accrescentibus, ultimo antice breviter deflexo, medio subangulato, basi subplanulato, antrorsum tumido et tum subconstricto; apertura perobliqua, elliptica; perist. subcontinuo, margine supero tenui, expanso, basali flexuoso, dilatato, reflexo, intus dente mediocri transversali munito.*

Diam. maj. $23\frac{1}{2}$, min. 18, alt. 12 mill.

Hab. Celebes (Mrs. F. Pfeiffer).

Note.—*Helix Bridwilli*, Pfr. in Proc. Zool. Soc. 1853, p. 49, and Reeve, Conch. Ic. sp. 1034, pl. 157, must be *Helix Bidwilli*.

18. *BULIMUS INTEGER*, Pfr. *B. testa imperforata, oblonga, solida, oblique irregulariter rugata, spiraliter sulcata (interstitiis confertim arcuato-lineolatis), carnea, strigis et flammulis griseo-fuscis picta; spira elongato-conica, obtusula; sutura crenulata; anfr. $7\frac{1}{2}$ convexiusculis, ultimo spira paulo brevior; columella griseo-lilacea, terete, sub torta, arcuatim in peristoma continuata; apertura fere verticali, truncata, ovali; perist. subincrassato, breviter expanso, margine columellari subdilatato, adnato.*

Long. 82, diam. 39 mill.

β . *Testa minore, saepe subunicolore carneo-grisea, anfr. $6\frac{1}{2}$, columella magis torta.*

Long. 65, diam. 31 mill.

Hab. Quito, Ecuador (Mrs. Pfeiffer).

19. *BULIMUS PLUMBEUS*, Pfr. *B. testa imperforata, oblonga, solida, impressionibus obliquis malleata, sub epidermide olivacea rufo-strigata et flammulata; spira convexo-conica, apice nigricante, obtusula; sutura subcrenulata; anfr. 6 vix convexis, ultimo*

spira paulo brevior, antice subascendente, basi attenuato; columella leviter plicato, caeruleo-albida; apertura vix obliqua, semi-ovali, intus nigro-livida, margaritacea; perist. nigricanti-plumbeo, incrassato et breviter reflexo.

Long. 93, diam. 36 mill.

Hab. Venezuela.

20. *BULIMUS HAINESI*, Pfr. *B. testa imperforata, ovato-conica, solida, oblique leviter striata, castanea, strigis undulosis et laceris flavidis picta; spira elongata, subconcavo-conica, apice violacea, acutiuscula; anfr. 6½ convexiusculis, ultimo ⅓ longitudinis vix formante, infra medium subangulato; columella parum declivi, livido-carnea; apertura diagonali, lunato-rotundata; perist. expanso et breviter reflexo, violaceo-fusco.*

Long. 52, diam. 27 mill.

Hab. Philippine Islands.

21. *BULIMUS EPISCOPALIS*, Pfr. *B. testa anguste umbilicata, ovato-conica, tenui, longitudinaliter subrugoso-striata et minute granulata, interdum transverse sulcatula, olivaceo-fulva, maculis rufis irregulariter aspersa; spira conica, acutiuscula; anfr. 4½, superis vix convexis, ultimo ⅓ longitudinis subæquante, oblique descendente, antice arcuatim subascendente, basi vix attenuato; columella leviter compresse plicatu; apertura angulato-ovali, intus lilacea; perist. purpureo, expanso et breviter revoluta, margine columellari subappresso.*

Long. 47-58, diam. 22-27 mill.

Hab. Bogota.

22. *BULIMUS COCAPATENSIS*, Pfr. *B. testa imperforata, ovato-oblonga, solida, minutissime decussata, sub epidermide virenti-fulvida violaceo-carnea; spira convexo-conica, apice obtusa; sutura albida, irregulari; anfr. 5½, superis radiatim costatis et minutissime granulatis, sequentibus peroblique descendentibus, parum convexis, ultimo spiram subæquante, basi rotundato; columella recedente, leviter arcuata; apertura subverticali, acuminato-ovali, intus margaritacea; perist. incrassato, breviter expanso, marginibus callo nitido junctis, columellari dilatato, adnato.*

Long. 67, diam. 30 mill.

Hab. Cocapata, Bolivia (T. Bridges).

23. *BULIMUS CONFLUENS*, Pfr. *B. testa late et compresse umbilicata, oblongo-acuminata, tenuiuscula, impresso-punctata, albida, strigis spadiceis angulosis, subfasciatim confluentibus, albo-punctatis picta; spira elongato-conica, acutiuscula; anfr. 6½ convexiusculis, ultimo spiram subæquante, basi valde compresso; columella arcuatim procedente, basi nodifera; apertura vix obliqua, rhombeo-ovali, basi subangulata, intus lilaceo-rubente; perist. undique late expanso, patente, margine columellari subflexuoso.*

Long. 40, diam. 17 mill.

Hab. Marmato, New Granada.

24. *BULIMUS CONVEXUS*, Pfr. *B. testa anguste umbilicata, oblongo-fusiformi, solidula, striata, nitida, albida, strigis fuscis, albo-lineolatis ornata; spira elongata, acutiuscula; anfr. 7 convexis, ultima spira paulo brevior, juxta umbilicum compressa; columella arcuata, supra basin nodifera; apertura obliqua, basi recedente, elliptica, basi canaliculata, intus lilaceo-rosea; perist. latiuscule expanso, margine columellari anguste reflexo.*

Long. 38, diam. 14 mill.

Hab. New Granada.

25. *BULIMUS CHAMÆLEON*, Pfr. *B. testa perforata, ovato-oblonga, solidula, striatula, nitida, albida, strigis fulvis, castaneis et latis nigricantibus varie ornata; spira convexo-conica, obtusula; anfr. 6 convexiusculis, ultimo spira paulo brevior, basi rotundato; columella leviter torta, recedente; apertura viz obliqua, truncato-ovali, intus albida; perist. simplice, recto, margine columellari superne dilatato, subangulatim reflexo.*

Long. 27, diam. $11\frac{1}{2}$ mill.

Hab. Quito (Mr. Bourcier).

26. *BULIMUS ABSCISSUS*, Pfr. *B. testa subimperfecta, pyramidata, solidula, ruguloso-striata, opaca, albida; spira elongato-conica, acutiuscula; anfr. $6\frac{1}{2}$ viz convexiusculis, ultimo spira paulo brevior, basi rectangule carinato, quasi abscisso; columella arcuata; apertura parum obliqua, rhomboideo-ovali, intus rosea; perist. viz expanso, purpureo, marginibus callo purpureo junctis, columellari reflexo, subadnato.*

Long. 28, diam. 13 mill.

Hab. Province of Quito, Ecuador.

27. *BULIMUS VERRUCOSUS*, Pfr. *B. testa aperte et compressae umbilicata, ovato-conica, solida, plicis subinterruptis et verrucis oblongis sculpta, fusca, pallide variegata; spira conica, acutiuscula; sutura subcanaliculata; anfr. $7\frac{1}{2}$ planiusculis, ultimo $\frac{3}{4}$ longitudinis subaequante, basi rotundato; columella leviter plicata; apertura subverticali, truncato-ovali, ad columellam subangulata, intus livida; perist. recto, intus fusco-limbato, margine columellari dilatato, patente.*

Long. 23, diam. $11\frac{1}{2}$ mill.

Hab. Galapagos Islands.

28. *ACHATINA ATRAMENTARIA*, Pfr. (A. regina β , Pfr. Mon.) *A. testa oblongo-ovata, solidula, confertim subruditer striata, nitida, plerumque tegumento calcareo obducta; spira elongata, apice obtusiuscula; anfr. 7 modice convexis, summis carneis, sequentibus fusco-violaceo flammulatis, ultimo $\frac{3}{4}$ longitudinis subaequante, nigricante; columella violacea, callosa, subtorta, basi oblique truncata; apertura obliqua, truncato-ovali, intus margaritacea, violacea; perist. simplice, intus nigro-limbato, marginibus callo fusco-nigro junctis.*

Long. 81, diam. 35 mill.

Hab. New Granada.

29. *ACHATINA (OLEACINA) BINNEYANA*, Pfr. *A. testa fusiformi, tenui, confertim plicata, parum nitente, carnea, strigis varicosis castaneis irregulariter notata; spira conica, apice acutiuscula; sutura marginata et eleganter crenulata; anfr. 7½ parum convexis, ultimo spira paulo longiore, basi attenuato; columella leviter arcuata, ad basin aperturæ verticalis, lanceolata late truncata; perist. simplice, tenui.*

Long. 91, diam. 33 mill.

Hab. — ?

30. *CYLINDRELLA CHORDATA*, Pfr. *C. testa vix rimata, cylindraceo-turrita, truncata, tenera, subtilissime striata et costulis chordæformibus, subdistantibus munita, albida; sutura costis excurrentibus crenata; anfr. superst. 11–12 vix convexiusculis, ultimo antice soluto, breviter descendente, latere dextro angulato, basi acute carinato; carina filiformi, crenata; apertura obliqua, subtetragono-rotunda; perist. albo, continuo, undique breviter expanso.*

Long. 10, diam. 2½ mill.

Hab. St. Croix, West Indies.

31. *PTEROCYCLOS BIFRONS*, Pfr. *Pt. testa umbilicata, discoidea, solida, superne arcuato-striatula, nitida, purpurascens-castanea; spira plana, vertice subtili, lucide castaneo; sutura alba; anfr. 6 convexis, ultimo latiore, periphæria obsolete angulata, antice descendente et juxta suturam prominentiam fornicatam formante, basi violaceo; apertura diagonali, subcirculari; perist. duplicato, incrassato; interno superne sulco triangulari interrupto, externo subpatente, superne producto et in prominentiam anfractus ultimi abeunte.*

Diam. maj. 25, min. 21½, alt. 8 mill.

Hab. Ceylon.

32. *CYCLOSTOMA (CYCLOTUS) IRREGULARE*, Pfr. *C. testa umbilicata, turbinato-depressa, solida, confertim striata, fulvida; spira breviter turbinata, acutiuscula; sutura profunda; anfr. 5 convexis, ultimo superne turgido, ad suturam late canaliculato, infra medium fascia lata fusca notato, circa umbilicum infundibuliformem, intus valide plicatum subanguloso; apertura obliqua, subtriangulari-ovali, superne angulata; perist. continuo, breviter adnato, recto, margine dextro dilatato, columellari incrassato, leviter arcuato, ad basin canaliculato.*

Diam. maj. 37, min. 30, alt. 19 mill.

Hab. Costarica, Central America.

33. *CYCLOSTOMA (CYCLOTUS) BOGOTENSE*, Pfr. *C. testa umbilicata, turbinato-depressa, tenuiuscula, malleato-punctata, nitida, fusco-viridi; spira parum elata, apice obtusiuscula, albida; anfr. 4½ convexis, rapide accrescentibus, ultimo terete, periphæria linea albida cingulato, circa umbilicum mediocrem, conicum pallido; apertura parum obliqua, subcirculari, superne vix angulata; perist.*

recto, continuo, breviter adnato, margine dextro perarcuato, sinistro subincrassato, minus arcuato.

Diam. maj. 22, min. 17, alt. 11 mill.

Hab. New Granada.

34. *CYCLOSTOMA (CYCLOSTOMUS) LEVI*, Pfr. *C. testa perforata, globoso-conica, tenui, levi, striatula, nitida, pellucida, rubello-succinea; spira conica, acutiuscula; anfr. 5 convexis, ultimo spiram subæquante; apertura obliqua, irregulariter rotundata; perist. subcontinuo, breviter adnato, margine sinistro medio angulatim dilatato.—Operc. calcareum, nucleo submediano.*

Long. 7, diam. 5 mill.

Hab. Guadalcanar, Salomon's Islands (Mr. Macgillivray).

35. *CATAULUS AUREUS*, Pfr. *C. testa breviter rimata, oblongo-pyramidalis, tenuiuscula, confertim striata, sericina, late aurea; spira turrita, apice acutiuscula; sutura submarginata; anfr. 8 convexis, ultimo parum attenuato, basi axin vix excedente; carina umbilicari valida, compressa, antrorsum parum dilatata; periomphalo lato, antice costulato; apertura circulari; perist. albo, duplici interno continuo, appresso, basi canali angusto interrupto, externo perincrassato, fornicatim reflexo, basi producto, canali mediocri perforato.*

Long. 25, diam. 10 mill.

Hab. Ceylon (Mr. Thwaites).

36. *PUPINA SUPERBA*, Pfr. *P. testa ovato-conica, tenui, glaberrima, nitidissima, aurantiaco-fusca; spira convexo-conica, acutiuscula; sutura levi, submarginata; anfr. 6 convexiusculis, ultimo latere apertura planulato, antice breviter ascendente, basi axin paululum excedente; apertura subcirculari, bicanaliculata; lamella parietali arcuata, latere dextro canalem latum cum peristomate formante, sinistro angulatim supra linguam latam columellarem prominente; perist. obtuso, latere dextro subrependo, sinistro ad canalem ascendentem subincrassato.*

Long. 15, diam. 12½ mill.

Hab. Sumatra (Mrs. F. Pfeiffer).

37. *HELICINA EGREGIA*, Pfr. *H. testa subgloboso-conoidea, tenuiuscula, spiraliter substriata, albida, superne tænia lata fulvida et ad peripheriam fascia castanea ornata; spira parvula, conoidea, acuta; anfr. vix 5 convexiusculis, ultimo magno, peripheria rotundato; columella brevi, in nodum dentiformem abeunte, callum emittente lutescentem, circumscriptum; apertura obliqua, subtriangulari; perist. subincrassato, horizontaliter patente.*

Diam. maj. 11½, min. 9, alt. 7½ mill.

Hab. Wanderer Bay, Guadalcanar, Salomon's Islands (Mr. Macgillivray).

38. *HELICINA SPINIFERA*, Pfr. *H. testa conoidea, tenuiuscula, oblique striata et spiraliter subconfertim lirata, flavida vel carnea,*

sape saturatius tessellata et ad suturam tænia articulata ornata; spira conoidea; anfr. 5 viz convexiusculis, ultimo acute carinato, basi convexiore; columella brevi, in spinam subacutam desinente, callum emittente vitreum, circumscriptum; apertura diagonali, subtriangulari; perist. breviter expanso, margine basali substricto, reflexiusculo.

Diam. maj. 12, min. 10½, alt. 8 mill.

Hab. Wanderer Bay, Guadalcanar, Salomon's Islands (*Mr. Macgillivray*).

July 10, 1855.

John Gould, Esq., F.R.S., in the Chair.

Mr. Westwood exhibited several new and remarkable species of beetles belonging to the families *Cicindelidæ* and *Carabidæ*. The species of the former family belonged to the genera *Collyris* and *Tricondyla*, peculiar to the islands of the Eastern Ocean, and had been collected by the late Colonel Champion and by Dr. Templeton in Ceylon. The species of *Carabidæ* were remarkable for having the antennæ particoloured, several of the joints being white. They were collected in Ceylon by Mr. Thwaites, in India by General Hearsey, in Brazil by Mr. Bates, and formed several new and distinct genera.

The following paper was read :—

DESCRIPTIONS OF TWO NEW GENERA AND SEVERAL NEW SPECIES
OF MOLLUSCA, FROM THE COLLECTION OF HUGH CUMING, Esq.
BY ARTHUR ADAMS, F.L.S., &c.

Genus *CLEA*, H. and A. Adams.

The shell on which this genus is founded resembles a fluviatile *Buccinum*, and is from the river in Sarawak Borneo. The notch at the fore part of the aperture differs from that of *Melanopsis*, and the form and abruptly truncate columella separates it from *Hemisimis* of Swainson. The only species at present known is that described below, distinct varieties of which have lately been received from Malacca.

Type. *CLEA NIGRICANS*, A. Adams.

Testa bucciniformis, ovata, epidermide corneo nigro-fusco induta, spira aperturam æquante, apice decollato; anfractibus convexiusculis transversim striatis; apertura ovato-oblonga, antice valde emarginata; columella abrupte truncata, plica unica, spirali, antica, obliqua instructa; labro simplici margine subreflexo et intus subincrassato.

Shell bucciniform, ovate, covered with a brown-black horny epidermis; spire as long as the aperture, apex decollated, eroded;

whorls rather convex, transversely striated. Aperture oblong-ovate, with a distinct notch in front; columella abruptly truncate, with a single oblique spiral fold anteriorly; outer lip simple, the margin somewhat reflexed and thickened internally.

Genus ERINNA, H. and A. Adams.

Shell semiglobose, thin, horny, olivaceous, longitudinally finely striated; spire very short, obtuse, apex rather eroded, last whorl ventricose, aperture large semioval; inner lip posteriorly ascending on the body-whorl; columella straight excavated and with a curved elevated ridge outside the excavation, continued in front into the outer lip, which is thin and simple.

Type. ERINNA NEWCOMBI, H. and A. Adams.

E. testa olivacea tenui longitudinaliter oblique striata, spira brevissima, obtusa, apice erosula, anfractu ultimo ventricoso; apertura semiovala; columella recta excavata, labro tenui.

Hab. Heneta River, Kami, Sandwich Islands. (*Dr. Newcomb.*)

This shell by some would be referred to *Neritina*, by others to *Limnaea*, and possibly by a few to the genus *Otina*; it appears, however, to be distinct in character from all these.

The nineteen other New Species which I shall proceed to describe are referable to established Genera, and may be characterized as follows:—

1. CHITON MACGILLIVRAYI, A. Adams.

C. testa oblongo-ovali, elevatiuscula nigra areis centralibus fasciis duabus pallidis longitudinaliter picta; valvis obtusis (sub lente) minutissime granulatis, liris concentricis undulatis rugoso-granatis ornatis, valva terminali antice umbonata, umbonibus sublaevibus vix productis; ligamento spinis calcareis nigris curvatis obtusiusculis obsito.

Hab. Fejee Islands, on the reefs. (*J. Macgillivray.*)

This is a well-marked and handsome species, rather more than two inches in length; the surface of the valves is finely granulated and ornamented, besides, with subgranulated, wavy, concentric, elevated lines; the central areas have a pale greenish band on each side of the umbo.

2. MUREX DILECTUS, A. Adams.

M. testa ovato-fusiformi trivariata, carneola, rufescenti sparsim variegata, spira brevi, acuminata, anfractibus septem, varicibus foliaceo-fimbriatis ac laciniatis, interstitiis plicato-nodosis, transversim liris rufis articulatis; apertura ovali, canali vix clauso, valde recurvato, labro margine crenato.

Hab. — ? (*Mus. Cuming.*)

3. MUREX (PTERONOTUS) SPECIOSUS, A. Adams.

M. testa ovato-fusiformi albida pallide rufo tincta; spira acuta, anfractibus septem, porcis transversis distantibus instructis, varicibus tribus foliatis, plicatis sublaciniatis postice in spina dilatata productis; interstitiis postice nodatis; apertura ovali integra; canali recto, clauso.

Hab. — ?

This is a very elegant species of *Murex*, which seems to be somewhat allied to the *M. alabaster* of Reeve, and is one of that section of the genus with foliated winged varices and a closed canal.

4. BELA ARCTICA, A. Adams.

B. testa ovato-fusiformi sordide alba epidermide fusco tenui induta, spira aperturam æquante, anfractibus 5, erosio longitudinaliter plicatis postice noduloso-angulatis, transversim obscure sulcatis, anfractu ultimo ventricosus postice carina crenata ornato; apertura ovali, labio expanso canali brevi lato aperto; labro tenui, postice sinu obsoleto instructo.

Hab. Arctic Seas.

This is an example of *Bela* of rather larger form than most of the other species. The genus appears to consist of small Muriciform shells, concentrated chiefly in northern regions.

5. CONUS TRAILLII, A. Adams.

C. testa parva turbinato-conica, spira elata, apice obtuso, anfractibus convexis, ultimo transversim sulcato, albida fasciis duabus latis cinereo tessellatis et punctis cinerascens ornata; anfractu ultimo postice rotundato; apertura angusta, lineari, labro simplici acuto.

Hab. Malacca. (Dr. Traill.)

This is a small and very peculiar species of *Conus*, unlike in appearance to any other example of the genus. The spire is elevated and obtuse, and the whorls are convex; the last whorl is rounded at the shoulder and is transversely grooved throughout, and the shell is ornamented with two broad bands tessellated with ashy.

6. CONUS SELECTUS, A. Adams.

C. testa turbinato-pyriformi, spira elata acuminata, anfractibus acute angulatis et fasciis rufis ornatis, anfractu ultimo acutim angulato ad peripheriam, antice transversim sulcato et angustato; luteola maculis rufo-fuscis, in lineis transversis dispositis, et fascia albida antica, ornata; apertura angusta antice effusa, labro valde postice inciso.

Hab. Malacca. (Dr. Traill.)

7. RHIZOCHILUS (CORALLIOPHILA) CALIFORNICA, A. Adams.

R. testa ovata, alba, rimata spira acuminata, anfractibus convexis, longitudinaliter nodoso-plicatis, transversim liratis, liris irregu-

laribus; apertura ovali, columella reflexa, subexplanata, canali brevi subrecurvo, labro acuto margine irregulari.

Hab. Gulf of California.

8. *STYLIFER EXARATUS*, A. Adams.

S. testa subulato-turrita alba nitida semipellucida, anfractibus permultis convexiusculis transversim sulcatis longitudinaliter creberrime striatis, suturis impressis; apice mucronato; apertura ovata ad basim subeffusa; labro sinuoso, margine incrassato et subreflexo.

Hab. Parasitic in the skins of Starfishes. Philippine Islands. (Mr. Cuming.)

In this species of Starfish Parasite the whorls of the large turreted wax-like shell are distinctly marked with transverse grooves, and the outer lip is thickened at the edge and a little reflexed.

9. *STYLIFER SUBANGULATUS*, A. Adams.

S. testa subulato-turrita alba nitida semipellucida, apice mucronato flexuoso, anfractibus permultis convexiusculis, lineis elevatis transversis cinctis, ultimo ad peripheriam subangulato; apertura obpyriformi, labro tenui sinuoso in medio producto.

Hab. West Indies.

Perhaps the nearest approach in form to this *Stylifer* is *S. coralinus* of Chemnitz, which was also obtained from the West Indies; but as there is an example in Mr. Cuming's Collection agreeing almost exactly with the figure in Chemnitz, and yet of a different species, I have named the present one *S. subangulatus* from the angular character of the last whorl.

10. *ADMETE BOREALIS*, A. Adams.

A. testa ovato-oblonga albida epidermide fusco corneo induta, anfractibus sex, convexis, supremis obscure longitudinaliter plicatis, ultimo ventricoso transversim sulcato sulcis subdistantibus suturis impressis; apertura ovali labio tenui expanso, columella arcuata simplice antice subtruncata, labro margine acuto intus simplice.

Hab. Melville Island.

This appears to be a well-marked species of the northern form of *Cancellariidæ*; the shell is much larger than *Admete viridula*, and the columella is entirely without plaits.

11. *MACROCHISMA SINENSIS*, A. Adams.

M. testa elongato-ovali compressa, antice rotundata et angustiori postice sinuata et latiori, ad extremitates elevatis, lineis elevatis radiantibus et concentricis decussatim ornata, albida fasciis carneis et punctis fuscis radiatim picta; foramine postico lanceolato elongato.

Hab. China Seas.

12. *MARGINELLA GEMMA*, A. Adams.

M. testa ovato-fusiformi, spira producta, acuminata, alba, fasciis duabus latis transversis, maculis viridescentibus tessellatis et lineis

articulatis picta; apertura angusta, antice dilatata, columella quadriplicata, antice macula rosea ornata, labro marginato, intus crenato, extus transversim viridi-lineato.

Hab. — ? (Mus. Cuming.)

A remarkably pretty species, allied to *M. festiva*.

13. *MESALIA PLICATA*, A. Adams.

M. testa subulato-turrita, rufo-fusca, anfractibus 12 convexiusculis, longitudinaliter plicatis, transversim sulcatis, anfractu ultimo antice subangulato; apertura subquadrato-ovali, antice vix producta ac reflexa, labro flexuoso, margine subincrassato.

Hab. Teneriffe. (Mr. MacAndrew.) (Mus. Cuming.)

A red-brown *Melania*-like species, with the whorls regularly plicate.

14. *CYLLENE UNIMACULATA*, A. Adams.

C. testa ovata alba macula rufescenti dorso ornata, spira acuminata, anfractibus planiusculis postice excavatis, transversim sulcatis longitudinaliter vulde plicatis, plicis postice acute angulatis; apertura ovali, columella antice oblique sulcata, labro intus valde lirato, extus incrassato.

Hab. China Seas. (Mus. Cuming.)

15. *CANCELLARIA CLATHRATA*, A. Adams.

C. testa oblongo-ovali anguste umbilicata, albida fasciis duabus pallide rufescentibus ornata, anfractibus septem postice vix angulatis regulariter clathratis; apertura subquadrata; columella recta tuberculato-granosa, triplicata, plica postica valida, plica media unisulcata, plica antica bisulcata, labro intus valde lirato.

Hab. China Seas. (Mus. Cuming.)

This species is most nearly allied to *C. indentata*, Sow.

16. *CANCELLARIA NITIDA*, A. Adams.

C. testa acuminato-ovali imperforata, alba, nitida spira acuta suturis valde impressis, anfractibus septem planis, longitudinaliter costatis, costis elevatis, compressis distantibus, crenulatis postice alatis, productis, liris tenuibus transversis regulariter sculptis; apertura ovata, columella triplicata.

Hab. Philippines. (Mus. Cuming.)

17. *CANCELLARIA TENUIS*, A. Adams.

C. testa ovato-ventricosa, tenuicula, sordide carneola, anguste umbilicata, spiræ suturis profunde impressis, anfractibus sex planiusculis, longitudinaliter costatis, costis tenuibus crenulatis fusco artikulatis, liris transversis regulariter sculptis, postice angulatis, productis, lamellatis; columella triplicata, labro tenui.

Hab. China Seas. (Mus. Cuming.)

Nearly allied to *C. foveolata*.

18. CANCELLARIA CRENULATA, A. Adams.

C. testa acuminato-ovata, imperforata, sordide alba, anfractibus sex planulatis, longitudinaliter plicatis, plicis validis subdistantibus, crenatis, postice angulatis productis, spinosis, transversim liris elevatis sculptis, columella triplicata.

Hab. China Seas. (Mus. Cuming.)

19. TYPHIS TRIANGULARIS, A. Adams.

T. testa fusiformi, triangulari, alba, subcancellata, varicibus tribus pinnatis postice tubulatis, interstitiis transversim liratis in medio nodosis; apertura ovali canali mediocri aperto dextrorso sub-reflexo.

Hab. — ? (Mus. Cuming.)

This is a species quite distinct from any *Typhis* hitherto described, and resembles in form the *Murex tripterus* of Born.

2. ON THE GEOGRAPHICAL DISTRIBUTION OF THE MAMMALIA AND BIRDS OF THE HIMALAYA.

BY B. H. HODGSON, ESQ.*

"The Hímaláyan mountains extend from the great bend of the Indus to the great bend of the Brahmapútra, or from Gilgit to Brahma Kúnd, between which their length is 1800 miles. Their mean breadth is about 90 miles; the maximum about 110, and the minimum 70 miles. The mean breadth of 90 miles may be most conveniently divided into three equal portions, each of which will therefore have 30 miles of extent. These transverse climatic divisions must be, of course, more or less arbitrary, and a microscopic vision would be disposed to increase them considerably beyond three, with reference to geological, to botanical, or to zoological phenomena. But, upon comparing Captain Herbert's distribution of geological phenomena with my own of zoological, and Dr. Hooker's of botanical, I am satisfied that three are enough. These regions I have denominated the lower, the middle, and the upper. They extend from the external margin of the Tarai to the ghát line of the snows. The lower region may be conveniently divided into—I. The sandstone range, with its contained Dhúns or Máris; II. The Bháver or Saul forest; III. The Tarai. The other two regions require no subdivisions. The following appear to be those demarcations by height which most fitly indicate the three regions:—

Name.	Elevational limits.
Lower region	Level of the plains to 4000 feet above the sea.
Central region.....	4000 to 10,000 feet above the sea.
Upper region	10,000 to 16,000† feet above the sea: highest peak measured is 28,176.

* Extracted from a memoir by the same author, entitled, "On the Physical Geography of the Himalaya," and printed in the Journal As. Soc. Bengal for 1849, by Frederic Moore.

† This is about the average height of the gháts and of the perpetual snow. It

"To begin with Man, the upper region is the exclusive habit of the Bhótias, who extend along the whole line of the gháts, and who, with the name, have retained the lingual and physical characteristics of their tramontane brethren. To the central region are confined—but each in their own province from east to west—the Mishmis, the Bors and Abors, the Akás, the Daphlas, the Lhópás, the Lepchas, the Limbús, the Kirántis, the Múrmis, the Névárs, the Súnwárs, the Chépáangs, the Gúrúngs, the Magars, the Khas or Khasias, the Kóhliis, the Garhwális, the Kakkas, the Bambas, the Gakars, the Khatirs, the Awans, and the Janjúhs. To the lower region are as exclusively limited the Kóceh, the Bódó, the Dhimál, the Kichak, the Thárú, the Dénwár, the Sallah, and the Bóksar. Of these races, those of the central region are all of transnivean origin, like the first named; but they are much altered in speech and aspect by twelve to fifteen centuries of residence in a cislivean climate, and by mixture in some few cases (as Khas or Khasia) with southern blood; whilst the races of the lower region are of the aboriginal Indian or Tamulian stock, and nearly unmixed, though some of them have adopted the speech and customs of the Hindus*. The hill Bráhmans, Rájpúts and Moslems, so common to the westward, so rare to the eastward, are more modern immigrants from the plains. It is very deserving of special notice, that the people of the upper region cannot endure the climate of the central one, nor those of the central region the climate of the lower one; so that the distribution even of the human race in the Himálaya affords a remarkable verification of our triple transverse division from a quarter the least likely to afford any such argument. But to proceed to our zoological enumerations. To the upper region exclusively belong, among the Ruminants, the Bisons (*Poëphagus*) and Musks, the Wild Goats (*Ibez*, *Hemitragus*) and Wild Sheep (*Pseudois*, *Ovis*); among the Rodents, the Marmots and Pikas (*Lagomys*); among Plantigrades, the Bears proper (*Ursus*). In the middle region, true Bovines (*Bos*) take the place of the Bisons of the upper region; Caprine Antelopes (*Nemorhædus*, *Kemas*) replace its Musks and Wild Goats and Sheep; common Rats, and Mice, and Hares, and Porcupines, and Hedgehogs, its Marmots and Pikas; and Sun Bears (*Helarctos*) its true Bears; whilst the Deer family, unknown to the upper region, is here represented only† by the anomalous Stilt-horns (*Styllocerus*). In the lower region, the Ox family is represented by Bibos and Bubalus (splendid wild types); the Deer family, here abundant, by Rusas, Stags, Axises, and Stilt-horns to boot; the Antelopes by Tetracerus, or the four-horned kind; the Rodents, by the Bambú

is also nearly the limit of possible investigation, and of the existence of organic phenomena.

* For these tribes see Journ. As. Soc. Beng. for December 1847, and April and June 1848, and May 1849.

† I am fully aware that *Rusas* (Sámber) are found in the western hills, but a careful consideration of the facts in that part of the Himalaya, with due advertence to the known habits of the group, satisfies me that these Deer have been driven into the western hills by the clearance of the Tarai and Bháver.

Rats (*Rhizomys*) and Spiny Hares (*Caprolagus*); and the Bear family by the Honey Bears (*Melursus*); add to all which, that to this region are exclusively confined all the large Pachyderms, such as the Elephant and Rhinoceros; and the Monkeys also (*Semnopithecus* et *Macacus*), though not so exclusively in their case. The Carnivora, again, are represented in the upper region by Ounces, by Foxes of a large sort (*V. montanus*), by the Weasels proper, and by the *Ailuri* or Cat Lories; in the middle region, by the Wild Dogs (*Cuon*), the Marten Weasels, Leopards, Thick-tailed Leopards (*F. Macrosceloides*, *Hodgs.*), Wild Cats (*F. Murmensis*, *Pardochrous Ogilbii*), Libyan Lynxes (*Libycus*), Zibets, Screw-tails (*Paradoxurus*), and Prionodons; and in the lower region by Tigers, Leopards, Hyenas, Wolves, Jackals*, insectivorous Foxes (*Kokri*), Bear-badgers (*Ursitaxus*), Urvas, Mongooses, Helictes or Oriental Gluttons, small Civets (*Viverrula*), hirsute Screw-tails, and sharp-faced Cats (*Celidogaster*). Zibets recur in this region but rarely, and one small species of Mongoose is found in special spots of the central region. The Otters in the upper region are represented by the small golden and brown species (*L. aurobrunnea*); in the central, by *L. monticola* and *indigitata*; in the lower, by the large Chinese species *L. Sinensis*. Among the Squirrels, the great thick-tailed and purple species (*S. macruroides* et *purpureus*) belong solely to the lower region; the small Lokries (*S. Lokria* et *Lokroides*) to the central, and the Siberian to the upper; whilst Flying Squirrels, a numerous group, are confined to the central region, so far as appears. In the Bat group, the Frugivorous species, or Pteropines, all are limited to the lower region, whilst the Horse-shoes (*Rhinolophinae*) specially affect the central region.

"From the class of Birds we may select as characteristic of the three regions the following:—

"The True Pheasants (*Phasianus*), the Tetraogalli, the Sanguine Pheasants (*Ithaginis*), the Horned and the Crested Pheasants (*Cerionis*, *Lophophorus*) of the upper region, are replaced by Fowl Pheasants (*Gallophasus*)† in the mid-region, and by Fowls proper (*Gallus*) in the lower. In like manner, among the Partridges (*Perdicinae*), the Grouse Partridges (*Tetraoperdix*) belong exclusively to the upper region; the Chukórs (*Caccabis*) and the Tree Partridges (*Arboricola*) to the central; and the Francolines (*Francolinus*) to the lower, though the black species of this last form are also found in the mid-region. In the Pigeon group, the Blanched Pigeons (*C. leuconota*) belong solely to the upper region; the Vinous Pigeons (*C. Hodgsoni*)

* Jackals have made their way (like crows) to the most populous spots of the central region, but they are not proper to the region, nor Indian Foxes, though some of the latter turned out by me in 1827 in the great valley of Nepal, have multiplied and settled their race there. *Ex his disce alia*.

† The influence of longitude on geographic distribution might be singularly illustrated, did space permit, from numerous Himálayan groups, Galline and others: thus, for example, a black-breasted *Cerionis* is never seen east of the Káli, nor a red-breasted one west of it. So of the black and white crested *Gallophasus*; whilst a black-backed one is never seen west of the Ardn, nor a white back east of it.

to the central, and the Green, the Golden, and the Banded (*Treron*, *Chalcophaps*, *Macropygia*), as entirely to the lower; the Trerons alone partially entering the central tract from the lower.

"The splendid Edolian Shrikes (*Chibia*, *Chaptia*, *Edolius*) belong exclusively to the lower region. They are replaced in the central tract by plain Dicrurines, and in the upper by plainer Lanians. The Cotton Birds (*Campephaga*) of the south are replaced by gaudy Ampelines (*Cochoa*) and Leiothricinians (*Leiothrix*, *Pteruthius*, *Cutia*) in the middle region: but both groups seem excluded from the north. Among the Fly-catchers the gaudy or remarkable species and forms belong wholly or chiefly to the lower region, as *Tchitreia*, *Rhipidura*, *Cryptolopha*, *Myiagra*, *Hemichelidon*, *Chelidorynx*; whilst those which approach the Warblers (*Niltava*, *Siphia*, *Digenea*) belong to the mid-region; and the plainer and more European types are alone found in the northern.

"Among the *Fissirostres*, Goat-suckers and Swallows are pretty generally distributed; but Rollers, Bee-eaters, Eurylaimi, Trogons, and all such gaudy types, belong to the south, with only occasional alpine representatives, as *Bucia* is of *Merops*. The Tenuirostral birds belong distinctively to the lower region. Yet they have representatives or summer visitants in all three, even among the Sun-birds. Upon the whole, however, it may be safely said that the Sun-birds (*Nectarinia*) belong to the south; the Honey-suckers (*Meliphagidae*) to the centre and south; and the Creepers, Nut-hatches and Wrens*, to the north and centre. The Sylvians or Warblers are too ubiquitous, or too migratory for our present purpose, even Boreal types being common in the lower in the cold weather. Horn-bills, Barbets, Parroquets (*Palæornis*, *Psittacula*) belong to the lower region, though they have a few representatives in the central; none in the upper. Woodpeckers abound in the lower and central regions, but are rare in the upper. True Cuckoos (*Cuculus*) are as common and numerous in the central region as Walking Cuckoos (*Phænicophaeus*, *Centropus*), &c. are in the southern, where also the Golden (*Chrysococcyx*) and Dicrurine Cuckoos (*Pseudornis*) have their sole abode, whilst what few of the group belong to the upper region, are all allied to the European type. The Ravens, Pies, Choughs, Nut-crackers and Conostomes of the upper region are replaced in the central region by Tree Pies (*Cissa*, *Dendrocitta*), Jays, Rocket-birds (*Psilorhinus*), Pie Thrushes (*Garrulax*), Timalias, and Hoopoe Thrushes (*Pomatorhinus*); and in the lower region, by the common Indian Crows (*C. culminatus et splendens*), Grackles†, Stares, Vagabond Pies and Dirt-birds (*Malacocercus*). Thrushes proper

* I have in this paper followed, without entirely approving, Mr. G. R. Gray's classification of my collections in the printed Catalogue of the British Museum. The geographic distribution is now attempted for the first time. But I will recur to the subject in a separate paper devoted to it.

† When Darjeeling was established there was not a Crow or Pastor to be seen. Now there are a few Crows, but no Pastors. Enormously abundant as both are in the lower region, this sufficiently proves that they are not native to the central tract, though common in the great valley of Nepal.

with Rock Thrushes, Ousels, Myophones, Zootheres, Tesias and Hypsipetes are as abundant in the central and upper region as Bulbuls, Orioles, Pittas, are in the central and lower.

"In the Finch family, the Haw-finches, Bull-finches, Gold-finches, and Cross-bills (*Loxia*) are as strictly confined to the upper regions as are the corvine Conostomes, Nut-crackers, Choughs and Ravens. The former are replaced in the central region by the Buntings, Wood-finches (*Montifringilla*), and Siskins; and in the lower region by the Weavers and Mûnias. The Raptorial birds are, in general, too cosmopolitan to subserve the purposes of geographic distribution. Still it may be remarked that the True Eagles belong, *quoad* breeding at least, to the upper region; the Crested Eagles (*Circæetus*), the Neopuses and Hawk Eagles (*Spizaetus*) to the central; and the Pernes (*Haliaetus* et *Pandion*) and Haliasturs to the lower. Among the Vultures the distinction is more marked: for the Eagle Vultures (*Gypætus*) belong exclusively to the upper region; the large European Vultures (*fulvus* et *cinereus*) to the central; and the Neophrons and the small Indian Vultures (*Bengalensis* et *tenuirostris*) to the lower. The Himâlaya abounds in *Falconidæ*, all the occidental types and species being found there, and many more peculiar and oriental ones; and it deserves special remark, that whereas the former (*Imperialis*, *Chrysaetos*, *Lanarius*, *Peregrinus*, *Palumbarius*, *Nisus*, &c.) affect the upper and central regions, the oriental types (*Hypotriorchis*, *Haliastur*, *Hierax*, *Hyptiopus*, *Elanus*, *Poliornis*) are quite confined to the lower region.

"Those perfect cosmopolitans the Waders and Swimmers, migrate regularly in April and October, between the plains of India and Tibet, and, in general, may be said to be wanting in the mountains, though most abundant in the Tarai. The great Herons (*nobilis* et *cinereus*) the great Storks (*nigra* et *purpurea*) and great Cranes (the Cyrus and Damoiselle) of the Tarai are never seen in the mountains, where the Egrets alone represent the first group. But the soft-billed smaller Waders (*Scolopacidæ*) are sufficiently common in the mountains, in which the Woodcock abounds, breeding in the upper region and frequenting the central, and rarely the lower region, from October till April. Geese, Ducks and Teals swarm in the Tarai, where every occidental type (so to speak, for they are ubiquitous) may be seen from October till April; and many oriental non-migratory types; whereas in the mountains the Mergansers (*orientalis*) and the Cormorants (*sinensis* et *pygmaeus*) only are found, and that very scantily, with a few Rails and Gallinules and Sandpipers from the vast host of the Waders."

3. ON NATIVE IMPRESSIONS REGARDING THE NATURAL HISTORY OF CERTAIN [INDIAN] ANIMALS.

By H. TORRENS, Esq., B.A., V.P. As. Soc. BENGAL*.

The singular impressions current among natives even of the highest rank, as to the habits and nature of certain animals, are not undeserving of record. It is rarely that the credence of the narrators in these things can be elicited, if even they go so far as to mention the existence of the belief; for they dread the ridicule as much as they anticipate the incredulity of a European: consequently these strange stories are but imperfectly known, even to the best informed among us in such legends. I mention one or two, with the circumstances of my acquaintance with them.

While out tiger-shooting with a party of Musulman gentlemen, I was asked, in a confidential way, whether I had ever seen the *Phnew*: I spell the word with the almost undecipherable nasal aspirate with which it was invariably pronounced to me. With an air of grave and serious interest, which is the best way of inspiring confidence, I replied, that the nature of the thing or being was unknown to me, and I requested information on the subject. On this there was a little hesitation, when, after a time, it was explained, that as I had seen more of Tigers than my companions, they fancied I might have also seen or heard something of the animal that always preceded the Tiger, called *Phnew*, from the ceaseless iteration of a sound similar to its name. I required further enlightenment as to this creature, when I found it was a "something that preceded the Tiger" by six cubits, wherever he went, making the noise '*phnew*' without end, looking for things for it." The old tales of "*the Lion and his provider*" recurred to me at once, and I bethought me of the hospitality of some cat-like sound of *Felis Tigris* having led, during his nightly search for prey, to the creation of the story. I have done all I could, but in vain, to discover whether there were real grounds for the belief, based on such a habit of the animal. I killed several Tigers in company with my friends afterwards, but though we found no *Phnew* with any of them, the silent faith of my believers in the marvellous has remained unshaken as to the existence of the mysterious animal. I subsequently learned that there is in Bengal a like belief respecting it among the Hindus, who term the creature *Ghóg*†.

There are few Englishmen in India who have not perhaps heard some of the strange tales related by the natives regarding Serpents. The most remarkable to me has always been the belief in the *Raj Samp*, or King-snake, who is represented as belonging to a superior order of Serpent, as exacting homage and obedience from his ophite subjects, and sometimes, as appearing with the semblance of a crown, the type of his authority. I was one day in company with a number

* Extracted from the Journal As. Soc. Bengal for 1849. By Frederic Moore.

† According to Babu Rajendralál Mitra, the Hindus distinguish the *Ghóg* as a different animal from the *Phnew*.—Edw. Blyth, Esq.

of native gentlemen, when the conversation turned upon the nature of antidotes in the case of Snake-bites, the belief as to the cure effected by applying to the wound the head of the identical reptile that had inflicted it, the charms powerful to compel the Snake to appear,—as to all which matters I have never been able to obtain, amid many tales, any relator daring enough to declare himself an eye-witness of the marvels he recounted. At last, mention being made of the King-snake, a party present said—“At any rate I can assure you of the existence of *him*, for it is well known that I have seen,” and the story, to the following effect, was then told. The narrator, being at that time, he said, about fourteen years old, had run hastily to the terraced roof of a ground-floor house to recover his kite, when his attention was attracted by a large *Goomna* (Cobra capello) which, without perceiving him, raised itself with dilated hood in the erect attitude common with those Snakes, and uttered a loud cry. Immediately some ten or twelve Snakes appeared from different quarters, and assembled before their king, when, after a short time, he pounced upon and devoured one of the smaller ones, with which arbitrary assertion of regal power the convocation terminated. Now the narrator of this tale had no interest in attempting to mislead me; he had mentioned what he stated again and again to the majority of persons present for years before I ever saw him, and he is naturally of intelligence, and in no sort the man to tell a useless falsehood. It is, I was then informed, by these sort of assemblages that the King-snake asserts his power, and that his subjects are called to them for the purpose of bringing tribute, in the shape of dainties for the royal palate; should, however, no tributary Frog or Cat, or bird be forthcoming, or should even the offering produced be insufficient, one of the luckless ophids pays in person the penalty of the omission, even as had been witnessed by my informant. I ventured with respect to his story to object, in as delicate a way as I could, to the incident of the cry uttered by the King-snake, but in this I was immediately over-ridden. The cry of the large *Goomna* was well known in the ruinous city where we were, and in which they abound, and it was described to me as a strident sound, the attempted imitation of which resembled the acute *staccato* note of a treble hautboy. I heard this sound myself subsequently during a sleepless night, emitted by a large Snake which killed a Rat in my bed-room: as it was pitch dark, I was unable to rise and destroy the intruder, but the sound was too peculiar not to have been that of the ophid, according as it did with the description given me, and being unlike anything I ever heard before, as also contrasting distinctly and remarkably with the cries of its victim. I have noted down these trivial, but not incurious matters, as an inducement to the record of more valuable facts as to the opinions held by natives upon the habits of animals, whence perhaps some really useful information may be elicited.

Note by MR. BLYTH.

The Snake which I have had invariably pointed out to me as the *Raj Samp* by natives of Bengal, is *Bungarus annularis*, which

habitually preys upon other Snakes, and is currently said to be a deadly enemy of the Cobra. I have taken a *Tropidonatus umbratus* about two-thirds the length of its devourer from the stomach of this species. Another ophiophagous species with the Cobra hood is *Hamadryas hannah* of Cantor, or *Maia vettata* of Elliot, a specimen of which, 9 feet long, I obtained in the Midnapore jungle.

Mr. Layard some time ago informed me of a popular notion among the natives of Ceylon respecting a "horn" which is said to grow sometimes, but very rarely, on the forehead of the Jackal; and this horn is regarded by them as a specific of innumerable virtues. Strange to say, the same notion is equally current among the natives of Bengal, who believe that it ensures the prosperity of its possessor, and success in every undertaking.

July 24, 1855.

Professor Tennant, F.G.S., in the Chair.

The following papers were read :—

1. ON THE BIRDS RECEIVED IN COLLECTIONS FROM SANTA FÉ DI BOGOTA. BY PHILIP LUTLEY SCLATER, M.A., F.Z.S.

(Aves, Pl. CIII. CIV.)

The collections of South American bird skins in the hands of European dealers are mostly imported from Rio and Bahia in Brazil and from Cayenne, occasionally also from Para and the island of Trinidad. About sixteen or seventeen years ago birds were first received in Paris from a French collector resident in Sante Fé di Bogota, the capital of the republic of New Granada, and since that time, the natives having been taught the method of preparing skins, large collections have been constantly imported both into England and France from the same quarter.

The species contained in these collections were, when first brought, for the most part new to science, and were described as such by M.M. De Lafresnaye, Boissoneau, Des Murs and Bourcier in Guérin's 'Revue Zoologique' and 'Magasin de Zoologie' in France, and some also in England by Mr. Fraser, in these Proceedings*. It is to the first-named of these gentlemen however, the Baron de Lafresnaye, of Lafresnaye, near Falaise, that we owe by far the largest part of the knowledge of New Grenadian ornithology we possess, upwards of seventy new species from that country being characterized in the numerous papers he has written upon that subject in the 'Revue Zoologique.'

At the meeting of Italian savants held at Milan in 1844, Prince Charles Lucien Bonaparte read a catalogue of a collection of birds received from Bogota by the Marchese Orazio Antinori, containing

* See P. Z. S. 1840, pp. 14, 22 and 59.

thirty-eight species*. This, I believe, is the only attempt that has been yet made to throw light upon the peculiar ornithology of that country, otherwise than by describing such species as were unprovided with names.

I have from time to time had the pleasure of bringing before this Society Bogota birds which seemed to have escaped the notice of previous writers on the subject, and have characterized a few others in the 'Annals of Natural History' and the 'Revue et Magasin de Zoologie.' Most of my materials have been derived from a fine series of birds from that locality possessed by the British Museum (which Mr. George Gray's kindness has afforded me every opportunity of investigating), or from the collections received by the Jardin des Plantes at Paris, in examining which I have met with great courtesy from the directors of that establishment. I have always noted down the species I have thus observed, whether new or previously known, from Bogota, and by adding to them the birds described by the several authors before mentioned as coming direct from that country, and others, of which I have specimens in my own collection, have formed a list of 435 species belonging to this peculiar Fauna. I have myself examined in one place or another examples of nearly the whole of these 435 species, and have the greatest confidence that I am not in error in including any of them in my list. Where I rely upon another writer for the locality, I have invariably given a reference to my authority.

This list, though large, is, I must own, very incomplete, nearly the whole being made up of *Passeres* and *Scansores*. I know as yet very little of the *Accipitres*, or the *Gallinæ*, *Grallæ* and *Anseres* of this fauna, or, indeed, of many individual families of the two first-mentioned orders. Were the catalogue perfect or nearly so, the number contained would be much greater, amounting, I should say, to upwards of 700 at least. My object in promulgating it thus crude is to start a foundation upon which a more perfect work may be established.

Bogota skins are easily recognized by persons who have had any experience in such matters from their peculiar preparation, the wings and tail being squeezed up into the body and the whole skin pressed together in a manner which gives them a very different appearance from birds brought from any other country. I believe that they are collected by the native Indian hunters in the forests of the New Grenadian Andes, and brought in to the capital to be disposed of to the persons who transmit them to Europe. It is stated (and I think Mr. Mark, our Vice-Consul at Bogota, is my authority on this point) that the birds are in no case brought from any very great distance in the surrounding country, perhaps never from farther than a circuit of 100 miles around the city. If this is really the case, or even if they are brought from double or treble that distance, the number of different species occurring within so limited a range would appear truly marvellous. No doubt this may be

* See Atti della sesta Riunione degli Scienziati Italiani tenuta in Milano, p. 404.

partly accounted for by the great variety of the elevations at which they are procured; the species belonging to one elevation in these countries being totally distinct from those of another.

The city of Bogota itself is situated at a height of more than 8900 feet above the sea-level, on a plateau on the western face of the eastern chain of the Andes of New Grenada, and it is not likely therefore that any great number of the birds brought to Europe as Bogota skins are obtained in its immediate neighbourhood. The animals that inhabit those higher ranges are doubtless quite different from those of the regions beneath, and it is probably in the hot tropical valleys of the Upper Magdalena and its affluents that the largest proportion of what are commonly called '*Bogota*' birds are found.

Nevertheless, as Schomburgk only mentions 420 species of birds in his Zoology of Guiana, Prince Maximilian only 362 as found in South-east Brazil, Tschudi only 460 as occurring in Peru, and Azara 448 species in the fauna of Paraguay, it is somewhat remarkable that from so limited a district a list in many respects so deficient should contain as many as 435 species, and it would seem without doubt to indicate that this region is extraordinarily rich in ornithic life.

The ornithology of this country, taken as a whole, may be pronounced quite distinct from that of Guiana or Brazil. Of course there are some species common to all parts of the South American continent; but looking at the *Passeres* included in this list, a very large proportion of them are as yet only known to occur in collections from this spot. A good many New Grenadian species, however, are likewise found on the upper branches of the Amazon, in Ecuador, and East Peru, and some are identical with those met with by D'Orbigny in Bolivia. It is in this direction (as M. de Lafresnaye has pointed out*) that the zoological province to which this part of New Grenada belongs seems rather to extend itself. A few Mexican and Central American forms are likewise present, as might be expected, and among these may be noticed as many as ten† or twelve species that are well-known inhabitants of the United States. Until we are better acquainted with the whole subject, it is hazardous to draw conclusions as to the comparative abundance or absence of particular families or genera in New Grenadian ornithology. It may be safely said, however, that the Tanagers and Humming-birds are nowhere more numerous. Of the former, no less than eighty-six out of a whole of 230 or thereabouts, occur in collections from these parts, and my list, though incomplete, contains the names of forty-nine species of Humming-birds.

* Rev. Zool. 1845, p. 111.

† Namely—

Mniotilta varia.

Helmitheros chrysopterus.

Rhinamphus aestivus.

" *striatus.*

" *blackburnie.*

Myiodiocetes canadensis.

Setophaga ruticilla.

Hedymeles ludovicianus.

Pyrranga aestiva.

" *rubra.*

Vireosylbia olivacea?

" *virescens?*

Mr. Gould has kindly assisted me by looking through the Trogons, Humming-birds, Toucans, and Odontophores contained in this catalogue.

VULTURIDÆ.

1. *SARCORHAMPHUS PAPA* (Linn.).

Mr. Gould has recently examined a specimen of this bird, procured near Bogota. The MM. Verreaux have received it from Santa Martha.

FALCONIDÆ.

2. *SPIZAËTUS TYRANNUS* (P. Max.); Temm. Pl. Col. 73. (Mus. Brit.) List of Spec. i. p. 15.

3. *SPIZAËTUS ISIDORI* (Des Murs). *Falco isidori*, Des Murs, Rev. Zool. 1845, p. 177; Icon. Orn. pl. 1. (Mus. Paris.)

4. *HERPETOTHERES CACHINNANS* (L.).

In Mr. S. Stevens' Bogota Collection. Santa Martha (Verreaux).

5. *GERANOËTUS MELANOLEUCUS* (Vieill.). *Falco agnia*, Temm. Pl. Col. 302. M. Lewy's Bogota Collection in the Paris Museum.

6. *BUTEO SCOTOPTERUS* (P. Max.) (Mus. Brit.) List of Spec. i. p. 38.

7. *ICTINIA PLUMBEA* (Gm.).

In the Bremen Museum from Bogota; M. Verreaux's collection from Santa Martha.

8. *HYPOTRIORCHIS RUFIGULARIS* (Daud.); Pl. Col. 348.

I have examined a Bogota specimen of this species. The MM. Verreaux have received it from Santa Martha.

9. *ACCIPITER ERYTHROCNEMIUS*, G. R. Gray; Kaup, Cont. Orn. 1850, p. 64.

A British Museum specimen from Mr. S. Stevens' Bogota collection seems to belong to this species.

STRIGIDÆ.

10. *PHALENOPSIS MINUTISSIMA* (P. Max.); Bp. Consp. p. 38.

11. *PHALENOPSIS** — ?

12. *SCOPS CHOLIBA* (Vieill.). *Strix crucigera*, Spix, Av. Bras. i. pl. 9.—(Mus. Paris et P. L. S.)

13. *SCOPS PORTORICENSIS*, Less. Tr. d'Orn. p. 107; Des Murs, Icon. Orn. pl. 26.

A specimen in the Paris Museum so labelled, from Bogota (Rieffer, 1843), appears distinct from, although closely allied to, the preceding. The two names are quoted by Mr. Cassin as synonymous.

* Since named *Phalenopsis jardinii*, Bp., Compt. Rend. Ac. Sc. Paris, 1855, Oct. 22nd.

14. *SYRNIUM ALBIGULARE*, Cassin, Proc. Ac. Sc. Philad. iv. p. 124 (1848); Journ. Ac. Philad. iv. p. 52. pl. 4. *Syrnium macabrum*, Bp. Consp. p. 53. *Ephialtes albopunctata*, G. R. Gray. *Syrnium albipunctatum*, Kaup, Cont. Orn. 1852, p. 120. (Mus. Paris. et P. L. S.)

15. *SYRNIUM HYLOPHILUM* (Temm.) Pl. Col. 373.

16. *SYRNIUM VIRGATUM*, Cassin, Proc. Ac. Sc. Philad. iv. p. 124 (1848).

Specimens of these two last birds from Bogota are included in Mr. Cassin's catalogue of the *Strigidae* contained in the Museum of the Philadelphia Academy.

CAPRIMULGIDÆ.

17. *STEATORNIS CARIPENSIS*, Humb.

One of the localities assigned to this curious bird is under the celebrated natural bridge of Iconozo, near Bogota*.

18. *HYDROPSALIS SEGMENTATUS*, Cass. Proc. Ac. Sc. Philad. (1849) iv. p. 238.—Mus. Philad. et Brit.

19. *HYDROPSALIS LYRA*, Bp. Consp. p. 59.—Mus. Philad. et Brit.

20. *NYCTIDROMUS GRALLARIUS*, Bp. Consp. p. 62.—Mus. Philad.

HIRUNDINIDÆ.

21. *ACANTHYLIS RUTILA* (Vieill.). *Hirundo rutila*, Vieill. Nouv. Dict. xiv. p. 528. *Hirundo robini*, Less. Tr. d'Orn. p. 271. *Chætura brunneitorques*, Lafr. R. Z. 1844, p. 81.

The Paris types of this elegant bird, whence Vieillot and Lesson's names were derived, are said to be from Trinidad. Lafresnaye's and others I have seen were from Bogota.

MOMOTINÆ.

22. *MOMOTUS BRASILIENSIS*, Lath. ?

The '*Momotus brasiliensis ex Bogota*' is one of those local varieties (*climatischen Abärte*, as Dr. Cabanis calls them) which are so puzzling to ornithologists. In general size and dimensions this bird agrees with Cayenne and Para examples, but the bill is decidedly smaller. The under plumage is nearly the same. In the Bogota bird the black is confined to a smaller space in the middle of the vertex, the thalassine blue front extending further backwards, and the occipital blue patch being also rather broader. There is also no such strongly marked chestnut colour on the nape, but a castaneous tinge extends over the upper back. I have not yet examined quite adult Bogota specimens, at least none that I have seen have the spatulation of the medial rectrices complete. Such may perhaps offer more decided differences.

* Humboldt and Bonpland, Voyage, Atlas, p. 12.

23. *MOMOTUS SEMIRUFUS*, Sclater, Rev. et Mag. de Zool. 1853, p. 489.

I am much inclined to think that this is the true *Prionites martii* of Spix (Av. Bras. i. p. 64. pl. 60), which is generally identified with Leadbeater's *M. platyrhynchus*—a very different form. Certainly Tschudi's *Prionites martii* in the Neufchatel Collection belongs to this species.

BUCCONIDÆ.

24. *BUCCO RADIATUS*, Sclater; Pr. Z. S. 1853, p. 122. pl. 50; Syn. of Bucc. p. 11.

25. *BUCCO MACRODACTYLUS* (Spix); Av. Bras. i. p. 51. pl. 39. fig. 2; Syn. of Bucc. p. 14.

26. *MALACOPTILA FUSCA* (Gm.); Syn. of Bucc. p. 15.

27. *MALACOPTILA SUBSTRIATA*, Sclater, Pr. Z. S. 1853, p. 123. pl. 51; Syn. of Bucc. p. 17.

I have not yet seen a second example of this species, of which the type is in my own collection.

28. *MALACOPTILA ASPERSA*, Sclater, Pr. Z. S. 1853, p. 123.
In Mr. Gould's collection from Bogota.

29. *MALACOPTILA MYSTACALIS* (Laf.); Rev. de Zool. 1850, p. 215. pl. 3; Syn. of Bucc. p. 18.

30. *MALACOPTILA FRONTALIS*, Sclater, Syn. of Bucc. p. 20.

31. *MONASA FLAVIROSTRIS*, Strickl. Cont. Orn. 1850, p. 47. pl. 48; Syn. of Bucc. p. 21.

32. *CHELIDOPTERA TENEBROSA* (Pall.); Syn. of Bucc. p. 23.

I have lately seen several Bogota examples of this bird, which seems to be widely distributed in Cisandean South America. They are smaller, and form in fact a distinct local variety from the Brazilian.

ALCEDINIDÆ.

33. *CERYLE AMERICANA* (Gm.); Bp. Att. Sc. It. vi. p. 403. sp. 3.
Seems to range far northwards. In Sitgreave's Report of the expedition to explore the Zuni and Colorado rivers (p. 64) it is mentioned as occurring abundantly on some of the tributaries of the Rio Grande.

34. *CERYLE AMAZONA* (Gm.).

I have a female of this species from Bogota.

GALBULIDÆ.

35. *GALBULA FUSCICAPILLA*, Sclater, P. Z. S. 1855, p. 13. pl. 77.

36. *GALBULA RUFICAUDA*, Cuv.; Le Vaill. Ois. de Par. pl. 50.

37. *GALBALCYRHYNCHUS LEUCOTIS*, Des Murs. R. Z. 1845, p. 207; Icon. Orn. pl. 17.

TROGONIDÆ.

38. *TROGON COLLARIS*, Vieill.; Gould, Mon. pl. 5.
 39. *TROGON PERSONATUS*, Gould, Ann. Nat. Hist. (1842) ix. p. 237.
 40. *TROGON CURUCUI* (L.). *Trogon melanurus*, Gould, Mon. pl. 18.
 41. *CALURUS AURICEPS*, Gould, Ann. Nat. Hist. ix. p. 238; Gray's Gen. pl. 25.
 42. *CALURUS FULGIDUS*, Gould, Mon. pl. 24.
 43. *CALURUS ANTISIANUS* (d'Orb.), Mag. de Zool. 1837, pl. 85. *Trogon pulchellus*, Gould, Mon. pl. 22. *Trogon antisianensis*, d'Orb. Voy. p. 381. pl. 86. fig. 1.

CÆREBIDÆ.

44. *CÆREBA CÆRULEA* (L.); Vieill. Ois. Dor. pl. 44.

The Bogota skins which I refer to this species may be distinguished from the Cayenne birds by their shorter bill and the black descending farther down the fore neck. Such slight differences are in my opinion insufficient for specific separation. This is perhaps the same as one of the *Cærebae* indicated as new in the Museum Heineanum of Dr. Cabanis.

45. *CHLOROPHANES ATRICAPILLA* (Vieill.); Ois. Dor. pl. 49; Reich. Handb. d. Sp. Orn. p. 234.

I have examples of this bird from Cayenne, Trinidad, Bogota and East Peru. The Bogota and Peruvian birds have a stronger bluish tinge on the back and belly. Mr. Gould has specimens of a very similar, though possibly distinct species, from Guatemala.

46. *DACNIS CAYANA* (L.); Sw. Zool. Ill. pl. 117.

47. *DACNIS ANGELICA*, De Filippi; Pl. Enl. 669. fig. 2.
The blue is brighter than in Cayenne specimens.

48. *DACNIS CÆREBICOLOR*, Sclater, Cont. Orn. 1851, p. 106.

49. *DACNIS EGREGIA*, Sclater, P. Z. S. 1854, p. 251.

Mr. Gould has lately obtained an example of this elegant species. The type I described, and which was the only one I had then seen, is in the British Museum.

50. *DACNIS PULCHERRIMA*, Sclater, Rev. et Mag. de Zool. 1853, p. 480.

I have not yet seen a second specimen of this very pretty bird, which has received another name from the Vicomte Du Bus—*Nemo*. No. CCXCIII.—PROCEEDINGS OF THE ZOOLOGICAL SOCIETY.

sia torquata (Bull. Ac. Sc. Brux. xxii. no. 2. Feb. 1855). But I maintain my opinion that it is a typical *Dacnis*, though I allow that it is difficult to separate certain species of that genus from the true *Nemosia*.

51. DACNIS LEUCOGENYS, Lafr., Rev. et Mag. de Zool. 1852, p. 470.

The British Museum have lately acquired a skin of this bird, which I omitted to include in my list of the genus given at p. 252 of the 'Proceedings' for last year. It forms a tenth species of this beautiful group, and must be placed next to *D. speciosa*.

52. CONIROSTRUM ALBIFRONS, Lafr., R. Z. 1842, p. 301, et Mag. de Zool. 1843, Ois. t. 35 (*♂ adultus*); *C. atrocyaneum*, Lafr. R. Z. 1848, p. 9 (*♂ juv.*), et *C. cæruleifrons*, Lafr. R. Z. 1842, p. 302 (*♀*).

I cannot but regard these three names as applicable to one species. The white-headed bird appears to be the adult, and the blue-headed the young male. I have examples of transition between these two. The *cæruleifrons* seems the female. I have also what I consider a still more immaturesly plumaged bird of this species: *Olivaceum*; *sibtus flavescens*; *alis caudaque fuscis*.

53. CONIROSTRUM SITTICOLOR, Lafr. R. Z. 1840, p. 102.

54. CONIROSTRUM RUFUM, Lafr. Mag. de Zool. 1842. *Dacnis rufo-cinerea*, Bp. Att. Sc. It. vi. p. 404, et Conspr. p. 401.

55. CERTHIOLA LUTEOLA, Cab. M. H. p. 97. sp. 533.

Trinidad and Bogota specimens of this species agree with each other, and with Dr. Cabanis' description.

56. DIGLOSSA SIMILIS, Lafr. R. Z. 1846, p. 318.

57. DIGLOSSA ATERRIMA, Lafr. R. Z. 1846, p. 319.

58. DIGLOSSA PERSONATA (Fraser.), P. Z. S. 1840, p. 22. (Feb. 25th.) *Uncirostrum cyaneum*, Lafr. R. Z. 1840, p. 102. (April 1st.)

59. DIGLOSSA LAFRESNAYII (Boiss.), R. Z. 1840, p. 5. *Agrilorhinus bonapartei*, Fraser, P. Z. S. 1840, p. 22.

60. DIGLOSSA HUMERALIS (Fraser), P. Z. S. 1840, p. 22; Cab. M. H. p. 27 (note).

I am rather doubtful whether these two last birds and Cabanis' *intermedia* (M. H. p. 27) are all valid species.

61. DIGLOSSA ALBILATERALIS, Lafr. R. Z. 1843, p. 99, et 1846, p. 316.

62. DIGLOSSA D'ORBIGNII (Boiss.), R. Z. 1840, p. 5.

Probably a female. Bogota seems the head-quarters of this peculiar genus. One is found in Central America and South Mexico, one in the highlands of British Guiana, three in Bolivia, and one (accord-

ing to Gay) in Chili. Professor Jameson has transmitted *D. personata* from the neighbourhood of Quito.

TROCHILIDÆ.

Mr. Gould has been kind enough to revise my list of *Trochilidæ*, of which at least fifty species occur in Bogota collections.

63. *EUTOXERES AQUILA* (Lodd.), P. Z. S. 1847, p. 42; Gould, Mon. Trochil. pt. ii. pl. 5.

64. *PHAËTHORNIS EMILIÆ* (Bourc. et Muls.), Ann. Sc. Lyons, 1846, p. 317.

65. *PHAËTHORNIS GUYI* (Less.); Gould, Mon. iv. 9.

66. *PHAËTHORNIS ANTHOPHILUS* (Bourc.), R. Z. 1843, p. 71; Gould, Mon. vii. 13.

67. *PHAËTHORNIS STRIIGULARIS*, Gould, Mon. viii. 15.

68. *PHAËTHORNIS GRISEIGULARIS*, Gould, Mon. ii. 14.

69. *HYPUROPTILA BUFFONI* (Less.); Gould, Mon. vii. 14.

70. *HYPUROPTILA CÆRULEIGASTER*, Gould, P. Z. S. 1847, p. 96; Mon. vii. 15.

71. *COLIBRI ANAIS* (Less.). *Petasophora anais*, Gould, Mon. v. 2.

72. *COLIBRI CYANOTIS* (Bourc.), R. Z. 1843, p. 101. *Petasophora cyanotis*, Gould, Mon. v. 4.

73. *COLIBRI DELPHINÆ* (Less.), R. Z. 1839, p. 44. *Petasophora delphinæ*, Gould, Mon. vi. 8.

74. *SCHISTES GEOFFROYI* (Bourc. et Muls.), Ann. Sc. Lyons, 1843, p. 37; Gould, Mon. vi. 12.

75. *HELIODOXA JACULA*, Gould, P. Z. S. 1849, p. 96.

76. *PTEROPHANES TEMMINCKI* (Boiss.), R. Z. 1839, p. 354; Gould, Mon. i. 7. *T. cyanopterus*, Fras. P. Z. S. 1840, p. 17.

77. *DOCIMASTES ENSIFERUS* (Boiss.), R. Z. 1839, p. 354; Gld. Mon. i. pl. 8. *T. derbianus*, Fras. P. Z. S. 1840, p. 16.

78. *DORIFERA LUDOVICIÆ* (Bourc. et Muls.), Ann. Sc. Lyons, 1847, p. 136; Gould, Mon. vi. 4.

79. *DORIFERA JOHANNÆ* (Bourc.), P. Z. S. 1847, p. 45; Gould, Mon. vi. 5.

80. *HELIANTHEA TYPICA*, Bp.; Gould, Mon. viii. 5.

81. *HELIANTHEA BONAPARTII* (Boiss.), R. Z. 1840, p. 6; Gould, Mon. viii. 6. *T. aureigaster*, Lodd. P. Z. S. 1840, p. 16.

82. *CÆLIGENA TYPICA*, Bp. ; Gould, Mon. viii. 11.
83. *LAFRESNAYA FLAVICAUDATA* (Fraser), P. Z. S. 1840, p. 18.
T. lafresnayi, Boiss. R. Z. 1840, p. 8.
84. *HELIANGELUS CLARISSÆ* (Long.), R. Z. 1841, p. 306 ; Mag.
de Zool. 1842 ; Ois. t. 26.
85. *HELIOTRYPHA PARZUDAKII* (Less.), R. Z. 1840, p. 72.
T. exortis, Fraser, P. Z. S. 1840, p. 18 ?
86. *ERIOCNEMIS CUPREIVENTRIS* (Fraser), P. Z. S. 1840, p. 15 ;
Gould, Mon. vi. pl. 9.
87. *ERIOCNEMIS VESTITA* (Longuem.), R. Z. 1838, p. 314.
T. uropygialis, Fraser, P. Z. S. 1840, p. 15.
88. *ERIOCNEMIS AURELIÆ* (B. & M.), Ann. Sc. Lyons. 1846,
p. 315.
89. *ERIOCNEMIS SIMPLEX*, Gould, P. Z. S. 1849, p. 96 ; Mon. iii.
pl. 8.
90. *ERIOCNEMIS ALINÆ* (Bourc.), R. Z. 1842, p. 372.
91. *ERIOCNEMIS ISAACSONI* (Parz.), R. Z. 1845, p. 95.
92. *LESBIA CYANURA* (Stephens). *T. cyanurus*, Stephens, Gen.
Zool. xiv. p. 239. *Cynanthus cyanurus*, Gould, Mon. iii. 2. *Ornis-*
mya kingii, Boiss. R. Z. 1840, p. 7. *Lesbia gorgo*, Reich.
93. *LESBIA AMARYLLIS* (Bourc. et Muls.), R. Z. 1848, p. 273 ;
Gould, Mon. vii. 1.
94. *LESBIA GOULDI* (Lodd.), P. Z. S. 1832, p. 7. *Ornismya*
syphia, Less. R. Z. 1840, p. 73.
95. *RHAMPHOMICRON MICRORHYNCHUM* (Boiss.), R. Z. 1839,
p. 354. *T. brachyrhynchus*, Fraser, P. Z. S. 1840, p. 16. Gould,
Mon. iv. 4.
96. *RHAMPHOMICRON HETEROPOGON* (Boiss.), R. Z. 1839,
p. 355. *T. coruscus*, Fras. P. Z. S. 1840, p. 15.
97. *OXYPOGON GUERINI* (Boiss.), R. Z. 1840, p. 7 ; Gould, Mon.
i. 12. *T. parvirostris*, Fraser, P. Z. S. 1840, p. 18.
98. *METALLURA TYRIANTHINA* (Lodd.), P. Z. S. 1832, p. 6.
O. paulinæ, Boiss. R. Z. 1839. p. 354. *T. allardi*, Bourc. R. Z.
1839, p. 294.
99. *ADELOMYIA MELANOGENYS* (Fraser), P. Z. S. 1840, p. 18.
T. sabinæ, Bourc. et Muls. Ann. Sc. Lyons, 1846, p. 323.
100. *CLYTOLÆMA RUBINOIDES* (Bourc. et Muls.), Ann. Sc. Lyons,
1846, p. 322.

101. *PANOPLITES FLAVESCENS* (Lodd.), P. Z. S. 1832, p. 7; Gould, Mon. viii. p. 10. *O. paradisea*, Boiss. R. Z. 1840, p. 6.

102. *THALURANIA COLOMBICA* (Bourc.), R. Z. 1843, p. 2.

103. *CYANOMYIA FRANCIE* (B. et M.), Ann. Sc. Lyons, 1846, p. 324.

104. *CHRYSURONIA GENONE* (Less.), Ois. Mouch. Supp. pl. 30.

105. *SAUCEROTTIA SOPHIE* (Bourc.), Ann. Sc. Lyons, 1846, p. 318.

106. *HYLOCHARIS PORTMANNI* (Bourc.), R. Z. 1843, p. 2.

107. *SPATHURA UNDERWOODI* (Less.); Gould, Mon. i. pl. 9.—*Spathura spatuligera*, Reich.

108. *GOULDIA POPELAIREI* (Dubus); Gould, Mon. vii. pl. 6.

109. *GOULDIA CONVERSI* (B. & M.), Ann. Sc. Lyons, 1846, p. 314; Gould, Mon. vii. 7.

110. *CALOTHORAX HELIODORI* (Bourc.), R. Z. 1840, p. 275; Gould, Mon. ii. 8.

111. *CALOTHORAX Mulsanti* (Bourc.), Ann. Sc. Lyons, 1842, p. 344; Gould, Mon. ii. 9.

FURNARIINÆ.

112. *RHODINOCICHLA ROSEA* (Less.).—*Furnarius roseus*, Less., Ill. Zool. pl. 5; Hartlaub in Cab. Journ. f. Orn. 1853, p. 33.—*Turdus vulpinus*, Hartl. R. Z. 1849, p. 276, et P. Z. S. 1850, p. 276, pl. 32 (♀).—*Cichalopia* (!) *vulpina*, Bp. Notes Orn. p. 29.

I have seen specimens of this curious bird from Aragua in Venezuela (Mus. Berolin.), from Bogota, and from Panama and Guatemala in the Derby Museum at Liverpool.

SYNALLAXINÆ.

113. *SYNALLAXIS STRIATICOLLIS*, Lafr. R. Z. 1843, p. 290.

114. *SYNALLAXIS UNIRUFUS*, Lafr. R. Z. 1843, p. 290.

115. *SYNALLAXIS BRACHYURUS*, Lafr. R. Z. 1843, p. 290.

116. *SYNALLAXIS GULARIS*, Lafr. R. Z. 1843, p. 290.

117. *SYNALLAXIS CINNAMOMEUS*, Lafr. R. Z. 1843, p. 290.

118. *SYNALLAXIS FULIGINOSUS*, Lafr. R. Z. 1843, p. 290.

119. *ANABATES FLAMMULATUS*, Eyton, Contr. Orn. 1850, p. 131.

120. *ANABATES BOISSONEAUII*, Lafr. R. Z. 1840, p. 104.—*Pseu-*

docolaptes semicinnamomeus (!), Reich. Hand. d. Sp. Orn. p. 210. (1853).

121. *MARGARORNIS SQUAMIGERA* (Lafr. et d'Orb.).—Syn. Av. in Mag. de Zool. 1838, p. 14; d'Orb. Voy. pl. 54. fig. 2.—*Anabassitta squamigera*, Lafr. Rev. et Mag. de Zool. 1853, p. 492.—*Margarornis perlata*, Reich. Hand. d. Sp. Orn. p. 179.

DENDROCOLAPTINÆ.

122. *DENDROCOLAPTIS PROMEROPIRHYNCHUS* (Less.), R. Z. 1840, p. 270.—*D. lineatocephalus*, G. R. Gray, Gen. Birds, pl. 43; Lafr. R. et M. de Zool. 1850, p. 99.

123. *DENDROCOLAPTIS FERROTI*, Lafr. R. Z. 1844, p. 80; Mag. de Zool. 1844, Ois. t. 54; R. et M. de Zool. 1850, p. 101.

124. *DENDREXETASTES TEMMINCKI* (Lafr.), Rev. de Zool. 1851, p. 145. pl. 4.—*Dendrexetastes capitoides*, Eyt. Contr. Orn. 1851, p. 76.—*Cladoscopus temmincki*, Reich. Handb. p. 192;—P. Z. S. 1855, p. 77.

The Derby Museum specimen of this bird (Mr. Eyton's type) and one in the British Museum are from Cayenne, but M. de Lafresnaye gives Bogota as the locality of his *D. temmincki*.

125. *DENDROCOPS TYRANNINUS*, Lafr. R. et M. de Zool. 1851, p. 328.

126. *DENDROORNIS TRIANGULARIS* (Lafr.), R. Z. 1842, p. 134; Mag. de Zool. 1843, pl. 32; R. et M. de Zool. 1850, p. 418.

127. *PICOLAPTIS LACRYMIGER*, Lafr. R. et M. de Zool. 1850, p. 144; Des Murs, Icon. Orn. pl. 70.

128. *XIPHORHYNCHUS PUCHERANI*, Lafr. R. et M. de Zool. 1850, p. 378; Des Murs, Icon. Orn. pl. 68.

129. *GLYPHORHYNCHUS CUNEATUS* (Licht.). (Mus. Brit.).

MENURINÆ.

130. *TRIPTORHINUS ORTHONYX* (Lafr.). *Merulaxis orthonyx*, Lafr. R. Z. 1843, p. 131; Mag. de Zool. 1844, pl. 93.

131. *SCYTALOPUS SENILIS* (Lafr.), R. Z. 1840, p. 103.

132. *SCYTALOPUS GRISEICOLLIS* (Lafr.), R. Z. 1840, p. 103.

133. *SCYTALOPUS SQUAMIGER* (Lafr.), R. Z. 1840, p. 103.

134. *TROGLODYTES* — ? —.

A Bogota skin of a true *Troglodytes* allied to Swainson's *æquinotialis* is in my collection, but I am unwilling to describe it as new, until I have made further researches among several rather obscure South American species of this genus, to one of which it may belong.

135. *THRYOTHORUS FASCIATO-VENTRIS*, Lafr. R. Z. 1845, p. 337.

136. *THRYOTHORUS STRIATULUS*, Lafr. R. Z. 1845, p. 338.

137. *THRYOTHORUS RUFALBUS*, Lafr. R. Z. 1845, p. 337.

I have Bogota skins of this bird, which perfectly agree with examples from Santa Martha from the MM. Verreaux's collection. The latter have been recognized by M. de Lafresnaye himself as of this species. I have also the same bird from Trinidad.

138. *THRYOTHORUS RUTILUS* (Vieill.).—*T. rutilans*, Sw. Orn. Dr. pl. 15.

In the Paris Museum from Bogota (Lewy). Common in collections from Trinidad.

139. *CINNICERTHIA UNIRUFA* (Lafr.).—*Limnornis unirufa*, Lafr. R. Z. 1840, p. 105.—*Cinn. unicolor*, Less. Descr. d. Mamm. et Ois. p. 286.—*Presbys unirufa*, Cab. M. H. p. 80 (1850).

This and the following bird seem more closely allied to *Thryothorus* than to *Limnornis* as placed by Lafresnaye.

140. *CINNICERTHIA CANIFRONS* (Lafr.).—*Limnornis canifrons*, Lafr. R. Z. 1840, p. 105.—*Presbys canifrons*, Cab. M. H. p. 80.

141. *CAMPYLORHYNCHUS BREVIROSTRIS*, Lafr. R. Z. 1845, p. 339.

142. *CAMPYLORHYNCHUS ZONATOIDES*, Lafr. R. Z. 1846, p. 92. (Mus. Brit.)

MNIOTILTINÆ.

143. *MNIOTILTA VARIA* (L.); Wilson, Am. Orn. pl. 19. fig. 3.

144. *HELMITHEROS CHRYSOPTERUS* (L.); Wilson, Am. Orn. pl. 15. fig. 5.

145. *RHIMAMPHUS ÆSTIVUS* (L.); Wils. Am. Orn. pl. 15. fig. 6.

146. *RHIMAMPHUS STRIATUS* (Gm.); Wils. Am. Orn. pl. 30. fig. 3.

147. *RHIMAMPHUS BLACKBURNIÆ* (Gm.); Wilson, Am. Orn. pl. 23, fig. 3.

148. *COMPSOTHLYPIS BRASILIANA* (Licht.).—*S. brasiliiana*, Licht. Verz. d. Doubl. p. 35.—*S. venusta*, Temm. Pl. Col. 293. fig. 1.

149. *MYIODIOCTES CANADENSIS* (L.); Wilson, Am. Orn. pl. 26. fig. 2.—*Setophaga nigriceincta*, Lafr. R. Z. 1843, p. 292, et 1844, p. 79; P. Z. S. 1854, p. 111.

150. *MYIOTHLYPIS NIGRICRISTATA* (Lafr.).—*Tricas nigriceistatus*, Lafr. R. Z. 1840, p. 230; Bp. Att. Sc. It. vi. p. 405; Bp. Consp. p. 311.

151. *MYIOTHLYPIS LUTEOVIRIDIS* (Bp.).—*Trichas luteoviridis*, Bp. Att. Sc. It. vi. p. 405, et Consp. p. 311.

152. *HYLOPHILUS SEMIBRUNNEUS*, Lafr. R. Z. 1845, p. 341.
153. *HYLOPHILUS FLAVIPES*, Lafr. R. Z. 1845, p. 342.
154. *BASILEUTERUS VERMIVORUS*, Cab., Schomb. Reise iii. 661; Bp. Consp. p. 313. (Mus. Brit.)
155. *BASILEUTERUS CORONATUS* (Tsch.).—*Myiodioctes coronatus*, Tsch. F. P. p. 193. pl. xiv. fig. 1. (err. sub nom. *M. tristriato*). In the Paris Museum from M. Lewy's Bogota collection.
156. *BASILEUTERUS DELATRII*, Bp. Notes Orn. p. 62.
B. olivaceus: pileo genisque rubris: superciliis a fronte et in nucham productis albis: subtus flavus, lateribus olivascens. This seems to be the same as the Nicaraguan bird characterized by Prince Bonaparte. It is common in Bogota collections, and is generally confounded with Swainson's *Setophaga rufifrons* from Mexico, which has only the breast yellow, and the belly and crissum brownish-white.
157. *SETOPHAGA RUTICILLA* (L.); Wils. Am. Orn. pl. 6. fig. 6.
158. *SETOPHAGA VERTICALIS* (Lafr. et d'Orb.); d'Orb. Voy. p. 330. pl. 35. fig. 1.
159. *SETOPHAGA ORNATA*, Boiss. R. Z. 1840, p. 70.
160. *SETOPHAGA FLAVEOLA*, Lafr. R. Z. 1844, p. 81.
161. *SETOPHAGA LEUCOPHOMMA*, Kp., P. Z. S. 1851, p. 49.
162. *SETOPHAGA RUFICORONATA*, Kp., P. Z. S. 1851, p. 49.
 These four last species seem to be very closely allied to one another. I have not yet studied the group sufficiently to be able to give an opinion as to whether they are all truly distinct. The *S. ornata* is common in Bogota collections.
163. *SETOPHAGA RUFIPECTUS* (Less.).—*Tyrannula rufipectus*, Less. Descr. d. Mamm. et Ois. p. 296.

164. *SETOPHAGA ALBIDIEMA*, Lafr. R. Z. 1848, p. 8.

165. *SETOPHAGA CINNAMOMEIVENTRIS* (Lafr.), R. Z. 1843, p. 291.

These three last species would be more correctly placed, perhaps, among the *Tyranninae*. They are certainly intermediate in form.

MOTACILLINÆ.

166. *ANTHUS BOGOTENSIS*, Schlater, P. Z. S. 1855, p. 109. pl. ci.

TURDINÆ.

167. *TURDUS GIGAS*, Fraser, P. Z. S. 1840, p. 59.

168. *TURDUS* — ? —

I have two specimens of a Bogota thrush allied to *T. fumigatus*, Licht., which I cannot yet satisfactorily determine.

169. *TURDUS MINIMUS*, Lafr. R. Z. 1848, p. 5.

Prince Bonaparte considers this the same as the northern *T. minor* (Notes Orn. p. 26, note).

170. *MIMUS* — ? —

I have a Bogota skin of a bird of this difficult genus, possibly referable to *M. colombianus*, Cab. or *M. melanopterus*, Lawrence.

FORMICARIINÆ.

171. *GRALLARIA SQUAMIGERA*, F. Prevost, Zool. Venus, pl. 1; Lafr. R. Z. 1842, p. 333.

172. *GRALLARIA RUFICAPILLA*, Lafr. R. Z. 1842, p. 333.

173. *GRALLARIA MODESTA*, Sclater, P. Z. S. 1855, p. 89. pl. 94.

174. *GRALLARIA HYPOLEUCA*, Sclater, P. Z. S. 1855, p. 88.

175. *GRALLARIA RUFULA*, Lafr. R. Z. 1843, p. 99.

176. *CHAMÆZA MARGINATA* (Max.)?

A single skin in the British Museum does not seem distinct from Brazilian specimens. It may perhaps be more strictly referable to the Peruvian *C. olivacea*, Tsch., with which I am not acquainted.

177. *CHAMÆZA MOLLISSIMA*, Sclater, P. Z. S. 1855, p. 89, pl. 96.

178. *FORMICARIUS NIGRIFRONS*, Gould, P. Z. S. 1855, p. 68.

Very similar to *Formicarius cayanensis*, Bodd. (Pl. Enl. 821), but with a permanent black front.

179. *FORMICARIUS FUSCATER* (Lafr.), R. Z. 1845, p. 341.

180. *CONOPOPHAGA ARDESIACA*, Lafr. et d'Orb.? Tsch. F. P. p. 179 (certe).

A Bogota skin in the British Museum is identical with a type-specimen of Tschudi in my own collection, but I rather doubt whether Tschudi has rightly assigned it to d'Orbigny's Bolivian species.

181. *CONOPOPHAGA NANA* (Lafr.).—*Grallaria nana*, Lafr. R. Z. 1842, p. 334.—(Mus. Brit.)

Seems more of a *Conopophaga* than a *Grallaria*, as placed by Lafresnaye.

182. *PITHYS ALBIFRONS* (Gm.), Pl. Enl. 707. fig. 1. Schomb. Guian. iii. 685.—Mus. Paris., ex Lewy.

183. *HETEROCNEMIS MARGINATA*, Sclater, sp. nov.

H. supra cinnamomeo-brunnea, pennis strictissime nigro mar-

ginatis: alis caudaque intus nigricantibus, externe brunnescentibus: subtus alba, gutturi et pectoris totius plumis strictè brunneo marginatis, quasi squamatis; his marginibus versus ventrem gradatim latioribus: ventre crissoque cinnamomeo-brunneis, nigro transversim vittatis: rostro nigro, mandibula inferiore basi alba; pedibus pallide brunneis.

Long. tota 3·0: alæ 2·2: caudæ 1·2: rostri a fronte ·5.

Mr. Strickland's name *Holocnemis*, proposed in 1844 for the *H. nævia* (figured in Cont. to Orn. 1849, pl. 18), has been previously applied to a family of Coleoptera by Schilling, and I therefore propose to change it into *Heterocnemis*. A second species of the genus seems to be the bird figured in Buffon's Pl. Enl. 73, fig. 2, under the name of 'Le Bambla de Cayenne.'—(*Turdus bambla*, Bodd.—*Heterocnemis bambla*, mihi.)—The present bird is very closely allied to the latter. In the upper plumage it is very similar, being only of a more cinnamomeous tinge; but it may be distinguished by the want of the white markings on the wings, and the throat, breast and upper belly being white, each feather narrowly margined with brown. In *H. bambla* these parts are ash-brown, with obsolete transverse markings. Lesson's *Myrmothera troglodytes* (Desc. d. Mamm. et Ois. p. 301, no. 118) seems the same as *H. bambla*. This form is indeed very closely connected with some of the Wrens, and hardly to be separated from certain birds that are usually placed in the genus *Scytalopus*.

184. *HYPOCNEMIS ERYTHROPHRYS*.—*Pithys erythrophrys*, Sclater, P. Z. S. 1854, p. 255, pl. lxxii. fig. 1.

This is possibly the same as Dr. Cabanis' *Conopophaga angustirostris*, Schomb. Guian. iii. 685.

185. *HYPOCNEMIS LEUCOPHRYS* (Tsch.).—*Thamnophilus myiotherinus* ♀, Spix, Av. Bras. ii. p. 30, pl. 42, fig. 2?—*Pithys leucophrys*, Tsch. F. P. p. 176.—*Myrmonax leucophrys*, Cab. Orn. Notiz. p. 211?

H. nigro-schistacea; alis caudaque nigricantibus; pileo antico et superciliis latis albis: gutture nigro in ventrem sensim dilutescente: rostro pedibusque nigris.

Long. tota 5·0: alæ 2·75: caudæ 2·0.

This bird, which is common in collections from Bogota, appears to be the same as Tschudi's species, though his figure is not a good one.

186. *HYPOCNEMIS MYIOTHERINA* (Spix).—*Thamnophilus myiotherinus* ♂, Spix, pl. 42, fig. 1.—*Hypocnemis melanolæma*, Sclater, P. Z. S. 1854, p. 254, pl. lxxii. fig. 2.

I have erred in giving a fresh name to this species, which appears to be the same as the bird figured by Spix as the male of his *Thamnophilus myiotherinus*. A Bogota specimen is in the British Museum.

187. *HYPOCNEMIS* —? —.

Olivaceo-brunnea, fronte paululum rufescente; plumis narium, loris, capitis lateribus et regione auriculari atris; tectricibus alarum nigris pallido brunneo late terminatis; subtus clare fulvo-brunnea, gutture toto albo; collaribus maculis quibusdam nigris; rostro nigro, mandibula inferiore basi albicante, pedibus nigris.

Long. tota 4·75 : alæ 2·6 : caudæ 1·6.

This is a very close ally of my *H. melanosticta*, P. Z. S. 1854, p. 234. pl. lxxiii., to the female of which it shows much resemblance. But the bill is stronger and thicker, the throat purer white, the abdomen much more deeply coloured, of a buffish brown. There are also no traces of superciliary marks, and the wings are more broadly margined. I think it must be in female plumage; yet the example in the British Museum, and three or four in the Paris collection, sent by M. Lewy from Bogota, seem to be all alike.

188. *MYRMECIZA LEUCASPIS*, Sclater, P. Z. S. 1854, p. 253. pl. 70.

189. *MYRMECIZA LONGIPES* (Sw.), Zool. Ill. n. s. pl. 23. (Mus. Brit.)

190. *FORMICIVORA ORNATA*, Sclater, Rev. et Mag. de Zool. 1853, p. 480. Mus. Paris., ex Lewy.

191. *FORMICIVORA AXILLARIS* (Vieill.) ? (Mus. Brit.)

192. *FORMICIVORA PYGMÆA* (Gm.). Pl. Enl. 831. fig. 2.

Several Bogota skins of what I take to be this species are in the British Museum; but the throat is white, not straw-coloured, as in Buffon's plate.

193. *FORMICIVORA CALLINOTA*, Sclater, P. Z. S. 1855, p. 89. pl. xcvi.

194. *FORMICIVORA CAUDATA*, Sclater, P. Z. S. 1854, p. 254. pl. lxxiv.

195. *PYRIGLENA TYRANNINA*, Sclater, P. Z. S. 1855, p. 90. pl. xcvi.

196. *PYRIGLENA ELLISIANA*, Sclater, P. Z. S. 1855, p. 109. pl. c.

197. *PYRIGLENA QUIXENSIS* (Corn.)—P. Z. S. 1854. p. 112.

I have examined a Bogota skin of this bird, which agrees with the one in Mr. Gould's Quixos collection mentioned by me in the list given in these Proceedings for last year.

198. *DYSITHAMNUS SEMICINEREUS*, Sclater, P. Z. S. 1855, p. 90. pl. xcvi.

199. *THAMNOPHILUS MELANURUS*, Gould, P.Z.S. 1855, p. 69. pl. lxxxiii.

200. *THAMNOPHILUS ALBICANS*, Lafr. R. Z. 1844, p. 82.
 201. *THAMNOPHILUS MULTISTRIATUS*, Lafr. R. Z. 1844, p. 82.
 202. *THAMNOPHILUS BREVIROSTRIS*, Lafr. R. Z. 1844, p. 82.
 203. *THAMNOPHILUS ASPERSIVENTER*, Lafr. et d'Orb.—Lafr. R. Z. 1844, p. 83.
 204. *THAMNOPHILUS SCHISTACEUS*, d'Orb.—Lafr. R. Z. 1844, p. 83.
 205. *THAMNOPHILUS NÆVIUS* (Gm.)?—Sclater, Draft Arr. of Thamn. in Edinb. N. Phil. Journ. 1855, vol. i. p. 243. sp. 28.
 206. *THAMNOPHILUS IMMACULATUS*, Lafr. R. Z. 1845, p. 340.

ALECTRURINÆ.

207. *COPURUS LEUCONOTUS*, Lafr. R. Z. 1842, p. 335.
 I agree with M. de Lafresnaye in considering this species distinct from the Brazilian *Copurus flicauda*, but I believe that the back is only *white* in younger individuals, excepting the patch on the rump, which is common to the other species. But the New Grenadian bird may be recognized by the comparatively darker colour of the head, and the extreme elongation of the medial rectrices, which in my Bogota skins are two inches longer than the corresponding feathers of the Brazilian.

208. *FLUVICOLA PICA* (Bodd.)—Pl. Enl. 675. fig. 1; *M. bicolor*, Gm.

I have also Trinidad and Cayenne specimens of this bird, which is quite distinct from its southern representative—*Fluvicola albiventris* (Spix) (Av. Bras. ii. p. 21. pl. 30 = *F. bicolor*, d'Orb. Voy. p. 343)—with which it is generally confounded.

TYRANNINÆ.

209. *TODIROSTRUM RUFICEPS*, Kp., P. Z. S. 1851, p. 52; *T. multicolor*, Strickl., Cont. Orn. 1852, pl. 85. fig. 2. p. 42.

210. *TODIROSTRUM GRENADENSE*, Hartl., R. Z. 1843, p. 289; Cont. Orn. 1852, pl. 85. fig. 1; *T. pectoralis*, Kp. P. Z. S. 1851, p. 52.

211. *TODIROSTRUM SQUAMICRISTATUM*, Lafr. R. Z. 1846, p. 363.

212. *TODIROSTRUM CINEREUM* (L.)—Pl. Enl. 585. fig. 3; *Todus melanocephalus*, Spix, Av. Bras. ii. pl. 9. fig. 2.

This little bird is found in Brazil (Spix and Max.), Guiana (Schomb.), Cayenne (Buff.) and Trinidad, from all which localities I have specimens. The British Museum and Mr. Gould's collection contain examples from Bogota.

213. *TODIROSTRUM GRACILIPES*, Sclater, sp. nov.

T. supra olivaceum; alis caudaque nigricantibus, olivaceo anguste limbatis; pileo fuscescente; loris mentoque albidis; subtus flavum, lateribus olivascens; gutture et pectore longitudinaliter nigro striatis; tectricibus subalaribus sulphureis; rostro nigro; pedibus carneis; tarsi gracillimis.

Long. tota 3·8; alæ 2·0; caudæ 1·7.

This apparently new species is most nearly allied to *T. maculatum* (Desm.) and *T. striaticolle*, Lafr. (in both of which the neck is also striated), but has the whole throat yellow. The bill agrees in form with that of the former bird, but is rather shorter and narrower. The type specimen is in the British Museum.

214. *TYRANNULA CINNAMOMEA* (d'Orb. et Lafr.), Syn. Av. in Mag. de Zool. 1837, p. 49; *M. vieilloti*, d'Orb. Voy. p. 321. pl. 34. fig. 1; *Myiobius pyrrhopterus*, Hartl. R. Z. 1843, p. 289.

215. *TYRANNULA ERYTHRURA*, Cab., Orn. Not. in Wiegmann Archiv, 1844, p. 249. t. 5. fig. 1; Schomb. Guian. iii. 701. (Mus. Brit.)

216. *TYRANNULA DIADEMA* (Hartl.) R. Z. 1843, p. 289; *M. fuscicapilla*, Lafr. R. Z. 1843, p. 291.

217. *TYRANNULA RUFICEPS* (Lafr.); *Muscicapa (Todiostrostrum?) ruficeps*, Lafr. R. Z. 1843, p. 291; *Fluvicola (!) ruficeps*, Lafr. R. Z. 1844, p. 80; *Conopophaga (!) ruficeps*, Lafr. Mag. de Zool. 1844, pl. 91, et Bp. Consp. p. 203.

218. *TYRANNULA ORNATA*, Lafr. R. et M. de Zool. 1853, p. 57. P. Z. S. 1854, p. 113. pl. 66. fig. 2.

219. *TYRANNULA RUFPECTUS*, Lafr. R. Z. 1846, p. 207.

220. *TYRANNULA SETOPHAGOIDES*, Bp., Att. Sc. It. vi. p. 405; et Consp. p. 188.

221. *TYRANNULA CINCHONETI* (Tsch.), F. P. p. 151. pl. 8. fig. 2; Lafr. R. Z. 1848, p. 7; *T. icterophrys*, Lafr. R. Z. 1845, p. 341.

222. *SAYORNIS NIGRICANS* (Sw.).—*Tyrannula nigricans*, Sw. Phil. Mag. 1827, p. 367; Aud. pl. 434; Bp. Notes Orn. p. 87. (Mus. Brit.)

223. *SAYORNIS ARDOSIACA* (Lafr.).—*Tyrannula ardosiacæ*, Lafr. R. Z. 1844, p. 80.

Closely allied to the preceding according to Lafresnaye, and therefore probably to be placed in the same genus.

224. *PYROCEPHALUS RUBINEUS* (Bodd.).—Pl. Enl. 675. fig. 1.

This bird is a summer visitant to Texas and New Mexico: see Cassin's B. of California, pl. xviii. p. 127. It also occurs in Trinidad, Cayenne and Brazil, and was found by Azara in Paraguay, and would seem therefore to have a very wide geographical range, if the

specimens from all these localities belong to one species. Mr. Gould's collection contains Bogota examples.

225. *MYIARCHUS VIRENS* (L.); Wils. Am. Orn. t. 13. fig. 5; Bp. Att. Sc. It. p. 405. sp. 31.

226. *MYIARCHUS FEROX* (Gm.); Pl. Enl. 571. fig. 1. (Mus. Brit. et P. L. S.)

227. *ELÆNIA CAYENNENSIS* (L.); Pl. Enl. 569. fig. 2. (Mus. Brit.)

228. *MILVULUS TYRANNUS* (L.); Pl. Enl. 571. fig. 1. (Mus. Brit.)

229. *HIRUNDINEA FERRUGINEA* (Gm.).—*Platyrhynchus hirundinaceus*, Spix, Av. Bras. ii. p. 11. t. 13. fig. 1. (Mus. Brit.)

230. *TYRANNUS FUMIGATUS*, Boiss. R. Z. 1841, p. 71.—*T. boiseauxii*, Bp. Consp. p. 71.

231. *TYRANNUS MELANCHOLICUS*, Vieill.—*M. furcata*, Spix, Av. Bras. ii. p. 19.—Schomb. Guian. iii. p. 700. (Mus. Brit.)

232. *TYRANNUS AUDAX* (Gm.).—Pl. Enl. 453. fig. 2.

233. *TYRANNUS RUFINUS* (Spix).—*M. rufina*, Spix, Av. Bras. ii. pl. 31.—Schomb. Guian. iii. p. 700. (Mus. Brit.)

234. *PITANGUS CHRYSOCEPHALUS*, Tsch., F. P. p. 23. pl. 8. fig. 1; Lafr. R. Z. 1848, p. 5.

There are examples of this bird in the British Museum from Bogota and Venezuela. M. de Lafresnaye's specimen was from Caraccas.

235. *TYRANNULUS ELATUS* (Lath.).—*Pipra elata*, Spix, Av. Bras. ii. t. 8 a. fig. 2. (Mus. Paris.)

236. *TYRANNULUS NIGRICAPILLUS*, Lafr. R. Z. 1845, p. 341.

TITYRINÆ.

237. *TITYRA CAYANA* (L.).—Pl. Enl. 304. (Mus. Brit.)

238. *TITYRA ALBITORQUES*, DuBus, Bull. Ac. Brux. 1847, xiv. pt. 2. p. 104; R. Z. 1848, p. 244.—*Psaris Fraseri*, Kp. P. Z. S. 1851, p. 47. (Mus. Brit.)

239. *PACHYRHAMPHUS NIGER* (Spix), Av. Bras. ii. pl. 45. fig. 1. (Mus. Brit.)

240. *PACHYRHAMPHUS VERSICOLOR* (Hartl.).—*Vireo-versicolor*, Hartl. R. Z. 1843, p. 289. *P. squamatus*, Lafr. R. Z. 1843, p. 291, et 1844, p. 46.

MUSCICAPINÆ?

241. POLIOPTILA LEUCOGASTER (Max.).—*Sylvia leucogaster*, Max. iii. p. 710—Sclater, P. Z. S. 1855, p. 12.

VIREONINÆ.

242. VIREOSYLVA OLIVACEA (Linn.). Aud. B. Am. pl. 150? (Mus. P. L. S.)

243. VIREOSYLVA VIRESCENS (Vieill.). Wils. Am. Orn. pl. 12? fig. 3.

244. VIREOLANIUS ICTEROPHRYS, Bp. Notes Orn. p. 60. (Pl. CIII.)

V. læte viridis, pileo cærulescente; superciliis protractis et macula suboculari læte flavis; subtus flavescenti-viridis, gula et alis subtus flavescientioribus; rostro Cyclorhini simili sed productiore.

Long. tota 4·75; alæ 2·75; caudæ 1·75.

Of this beautiful bird I have seen but the one specimen in the Derby Museum at Liverpool, from which my characters are taken. I was intending to name it as apparently new, when I found Prince Bonaparte's description of *Vireolanus icterophrys* in a note to his "Notes ornithologiques sur les collections rapportées par M. A. Delattre," which I think must be intended for the same bird. The Derby Museum specimen is from Bogota. The Prince gives "Rio Negro" as his locality.

245. CYCLORHIS NIGRIROSTRIS, Lafr. R. Z. 1842, p. 133.

PIPRINÆ.

246. MANACUS EDWARDSI, Bp. Consp. p. 99.

Bogota specimens agree pretty well with those from Cayenne, but show rather more cinereous on the sides of the belly. The Brazilian *M. gutturosus* (Bp. Consp. p. 99) has the whole abdomen and the lower back- and tail-coverts cinereous.

247. MANACUS FLAVEOLUS, Cass. Pr. Ac. Sc. Phil. 1851, p. 349. *Pipra flavitincta*, Sclater, P. Z. S. 1852, p. 34. pl. xlviii.

Mr. Cassin's name had not reached this side of the Atlantic at the time I gave a second to this species. I do not know what is meant by *M. bogotensis*, which Prince Bonaparte quotes as *my* (!) name for this bird in his Conspectus Anisodactylorum, p. 3.

248. CHIROXIPHYA MELANOCEPHALA (Vieill.).—*Pipra melanocephala*, Vieill. Nouv. Dict. xix. p. 163.—*P. pareolides*, d'Orb. et Lafr. R. Z. 1838, p. 165.

Found also in Trinidad, Venezuela and Carthagena; not in Cayenne, as stated in Prince Bonaparte's Conspectus.

specimens from all
collection con^t

mus. ii. t. 8. fig. 1. Com-

225.
Bp. Att

Enl. 34. fig. 2. I have seen

226
et P

Rev. et Mag. de Zool. 1852, p. 9;
100. fig. 1.

R

Bp. P. Z. S. 1837, p. 122; Gray's Gen.
Common from Bogota.

227. *PIRITES FLAVICAPILLA*, Sclater, Rev. et Mag. de Zool. 1851,
100. fig. 1.

228. *MASIS CHRYSOPTERUS* (Lafr.), R. Z. 1843, p. 97; Bp.
175; Gray's Gen. pl. 67. fig. 1.

229. *PIRITES CHLORIS* (Temm.), Pl. Col. 172. fig. 2; Tsch.
F. P. p. 144. (Mus. Brit.)

230. *RUPICOLA PERUVIANA* (Latham).

The Peruvian Cock of the Rock seems to be distributed along the
Andean range from Bogota through Ecuador and East Peru into
Bolivia, where it was found by d'Orbigny in the province of Yungas.
I am not sure that it occurs on the western side of the great range.
The *Rupicola crocea* has a more limited distribution, being seem-
ingly confined to the mountain system of Guiana. Mr. Wallace
came across it at the inner extremity of this range near the borders
of the Rio Negro*.

237. *COTINGA NATTERERI* (Boiss.), R. Z. 1840, p. 2.

238. *AMPELION RUBRICRISTATUS* (Lafr. et d'Orb.), d'Orb.
Voy. p. 298. pl. 31. fig. 1. *A. rufocristata*, Boiss. R. Z. 1840, p. 3.

239. *AMPELION ARCUATUS* (Lafr.), R. Z. 1843, p. 98.

260. *AMPELION CINCTUS* (Tsch.).—*Ampelis cincta*, Tsch. Wieg-
Arch. 1843, p. 285, et Faun. Per. p. 285. *Cotinga tschudii*, Gray's
Gen. i. p. 279. (Pl. CIV.)

♂ *olivaceus; pileo nigro, in medio aurco guttato; dorsae pennae
nigrae, olivaceo circumcinctis; alarum tectricibus, secundariis
et caudae tectricibus ad apicem flavo maculatis; alarum tectricibus
majoribus pure olivaceis; subtus flavus, pennae nigrae et olivaceo
circumcinctis; gula flavescentiore; rectricibus nigris, maculis
terminalibus flavo-albidis.*

♀ *supra olivacea, dorso nigro punctato; subtus neri similis, sed
gula albo-flavescentiore.*

Long. tota 7.0; alae 4.0.

A pair of this beautiful species (of which Tschudi has described
the female) are in the British Museum.

* See his Travels on the Amazon and Rio Negro. A most interesting account
of the habits of this remarkable bird is also given by Schomburgk in Nannamania,
1830, pt. 2. p. 34.

261. *PROCNAS OCCIDENTALIS*, Schatz, P. Z. S. 1854, p. 249.
 262. *PIPEROLA RIEFFERI* (Boiss.), R. Z. 1840, p. 3.
 263. *PIPEROLA AURIPPECTUS* (Laf.), R. Z. 1843, p. 68.

QUERULINÆ.

264. *LIPAGUS FUSCO-CINEREUS* (Laf.), R. Z. 1843, p. 291.
 265. *QUERULA CRISTATA* (Bodd.)—Pl. Enl. 381. (Mus. Brit.)

GYMNODERINÆ.

266. *PYRODERUS GRENADENSIS* (Laf.), R. Z., 1846, p. 277.
 The Brazilian and New Grenadian *Pyroderi* seem to differ little except in size. The bill of the latter species is considerably smaller.

GARRULINÆ.

267. *CYANOCORAX ARMILLATUS*, G. R. Gray, Gen. Birds, ii. pl. 94.
 268. *CYANOCORAX VIOLACEUS*, DuRoi, Bull. Ac. Brux. (1847), xiv. ii. p. 103; Esq. Orn. pl. 30.—*C. hyacinthinus*, Cab. in Schomb. Reise, iii. 683.—*C. harrisi*, Cassin. (Mus. P. L. S.)
 269. *CYANOCORAX PILATUS* (Temm.), Pl. Col. 58. (Mus. Brit. et P. L. S.)
 270. *CYANOCORAX INCAS* (Bodd.); Pl. Enl. 625.—*Xanthours peruviana*, Bp. Consp. p. 110.
 Dr. Cabanis has separated the Venezuelan variety (?) of this species under the name of *cyanocapillus*. See Tsch. F. P. p. 233, and Cab. Mus. Hein. p. 223. I do not know whether the Bogota bird is most like the Peruvian or Venezuelan form.

QUISCALINÆ.

271. *QUISCALUS SUBALARIS*, Boiss. R. Z. 1840, p. 70.

ICTERINÆ.

272. *CACICUS UROPYGIALIS*, Laf. R. Z. 1843, p. 90, et 1847, p. 218.
 273. *ARCHIFLANUS LEUCORHAMPHUS* (Bp.), Att. Sc. It. vi. p. 405; Consp. p. 428.
 274. *OSTINOPS CRISTATUS* (Gm.)—Pl. Enl. 344. (Mus. P. L. S.)
 275. *OCYALUS WAGLERI*, Gray's Gen. pl. 85.

I remarked a specimen of this species in a small collection lately received by Mr. S. Stevens from Bogota.

No. CCXCIV.—PROCEEDINGS OF THE ZOOLOGICAL SOCIETY.

249. *PIPRA FILICAUDA*, Spix, Av. Bras. ii. t. 8. fig. 1. Common in collections from Bogota.

250. *PIPRA LEUCOCILLA* (L.) Pl. Enl. 34. fig. 2. I have seen Bogota skins of this bird.

251. *PIPRA ISIDORI*, Sclater, Rev. et Mag. de Zool. 1852, p. 9; Cont. Orn. 1852, p. 132. pl. 100. fig. 1.

252. *PIPRA STRIOLATA*, Bp. P. Z. S. 1837, p. 122; Gray's Gen. pl. 67. fig. 2. Common from Bogota.

253. *PIPRA FLAVICAPILLA*, Sclater, Rev. et Mag. de Zool. 1851, p. 9; Cont. Orn. 1852, p. 132.

254. *MASIUS CHRYSOPTERUS* (Lafr.), R. Z. 1843, p. 97; Bp. Consp. p. 175; Gray's Gen. pl. 67. fig. 1.

255. *PIPRITES CHLORIS* (Temm.), Pl. Col. 172. fig. 2; Tsch. F. P. p. 144. (Mus. Brit.)

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The Peruvian Cock of the Rock seems to be distributed along the Andean range from Bogota through Ecuador and East Peru into Bolivia, where it was found by d'Orbigny in the province of Yungas. I am not sure that it occurs on the western side of the great range. The *Rupicola crocea* has a more limited distribution, being seemingly confined to the mountain system of Guiana. Mr. Wallace came across it at the inner extremity of this range near the borders of the Rio Negro*.

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♂ *olivaceus; pileo nigro, in medio aureo guttato; dorsi pennis nigris, olivaceo circumcinctis; alarum tectricibus, secundariis et caudæ tectricibus ad apicem flavo maculatis; alarum tectricibus majoribus pure olivaceis; subtus flavus, pennis nigro et olivaceo circumcinctis; gula flavescentiore; rectricibus nigris, maculis terminalibus flavo-albidis.*

♀ *supra olivacea, dorso nigro punctato; subtus mari similis, sed gula albo-flavescentiore.*

Long. tota 7·0; alæ 4·0.

A pair of this beautiful species (of which Tschudi has described the female) are in the British Museum.

* See his Travels on the Amazon and Rio Negro. A most interesting account of the habits of this remarkable bird is also given by Schomburgk in Naumannia, 1850, pt. 2. p. 34.

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263. *PIPREOLA AUREIPECTUS* (Lafr.), R. Z. 1843, p. 68.

QUERULINÆ.

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The Brazilian and New Grenadian *Pyroderi* seem to differ little except in size. The bill of the latter species is considerably smaller.

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ICTERINÆ.

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273. *ARCHIPLANUS LEUCORHAMPHUS* (Bp.), Att. Sc. It. vi. p. 405; Consp. p. 428.

274. *OSTINOPS CRISTATUS* (Gm.)—Pl. Enl. 344. (Mus. P. L. S.)

275. *OCYALUS WAGLERI*, Gray's Gen. pl. 85.

I remarked a specimen of this species in a small collection lately received by Mr. S. Stevens from Bogota.

NO. CCXCIV.—PROCEEDINGS OF THE ZOOLOGICAL SOCIETY.

276. *HYPOPYRRHUS PYRRHOGASTER* (de Tarr.), R. Z. 1837, p. 252; Bp. Consp. p. 425.

277. *ICTERUS GIRAUDI*, Cassin, Journ. Ac. Philad. i. pl. 17, p. 138.
The Bogota birds have the bend of the wing yellow, and are therefore perhaps distinct from the Venezuelan *I. melanopterus*.—See Bp. Notes Orn. p. 16.

278. *ICTERUS MESOMELAS* (Wagler), Isis, 1829, p. 755.—*I. atrigularis*, Less. Cent. Zool. pl. 22, p. 73. (Mus. P. L. S.)

COCOTHRAUSTINÆ.

279. *HEDYMELES LUDOVICIANUS* (Linn.)—Wils. Am. Orn. pl. 17, fig. 2.

This well-known North American species extends all through Mexico and Central America into the northern parts of the southern continent. I have seen many Bogota specimens, but they are never in fully adult plumage.

280. *PHEUCTICUS AUREIVENTER* (Lafr. et d'Orb.)—d'Orb. Voy. pl. 49, fig. 2, p. 365.—Bp. Att. Sc. It. vi. p. 405. (Mus. Brit.)

TANAGRINÆ.

281. *PITYLUS GROSSUS* (Linn.)—Pl. Enl. 154. (Mus. Brit. et P. L. S.)

282. *SCHISTOCHLAMYS ATRA* (Gm.)—Pl. Enl. 714, fig. 2.

This species seems widely distributed. I have examples from Bogota, Cayenne, and Trinidad. Tschudi noticed it in Eastern Peru (F. P. p. 210), D'Orbigny in the provinces of Moxos and Chiquitos in Bolivia (Voy. p. 291), and Prince Max. of Neuwied in South-east Brazil (Beitr. iii. 504).

283. *CHLORORNIS RIEFFERI* (Boiss.), R. Z. 1840, p. 4; Gray's Gen. pl. 89.

284. *SALTATOR MAGNUS* (Gm.), Pl. Enl. 205. (Mus. Brit.)

285. *SALTATOR STRIATIPECTUS*, Lafr. R. Z. 1847, p. 73. (Mus. P. L. S.)

286. *CISSOPIS MINOR*, Tsch. F. P. p. 211. (Mus. P. L. S.)

287. *ARREMON AXILLARIS*, Sclater, P. Z. S. 1854, p. 97 et Tan. Cat. Sp. App. p. 15.

288. *ARREMON ERYTHORHYNCHUS*, Sclater, P. Z. S. 1855, p. 83, pl. lxxxix.

289. *ARREMON CONIROSTRIS*, Bp. Consp. p. 488.

A rather aberrant species if really belonging to this genus. I have a Bogota skin, which is quite similar to a Santa Martha example from the MM. Verreaux's collection.

290. BUARREMON ASSIMILIS (Boiss.), R. Z. 1840, p. 67.
291. BUARREMON PALLIDINUCHUS (Boiss.), R. Z. 1840, p. 68.
292. BUARREMON ALBIFRENATUS (Boiss.), R. Z. 1840, p. 68.—*Arr. mystacalis*, Sclater, Cont. Orn. 1852, pl. 99, p. 131, et Rev. et Mag. de Zool. 1852, p. 8.
293. BUARREMON BRUNNEINUCHUS (Lafr.), R. Z. 1839, p. 97; Boiss. R. Z. 1840, p. 68.
294. BUARREMON ALBINUCHUS (Lafr.), R. Z. 1838, p. 5. (Mus. P. L. S.).
295. BUARREMON GUTTURALIS (Lafr.), R. Z. 1843, p. 98.
296. BUARREMON SCHISTACEUS (Boiss.), R. Z. 1840, p. 69.
297. PIPILOPSIS SEMIRUFUS (Boiss.), R. Z. 1840, p. 69.
298. CHLOROSPINGUS ALBITEMPORALIS (Lafr.), R. Z. 1848, p. 12.
I doubt whether this Bogota bird is really identical with the Mexican *Arremon ophthalmicus*, DuBus, as thought by M. de Lafresnaye (R. Z. 1848, p. 247.)
299. CHLOROSPINGUS FLAVIPECTUS (Lafr.), R. Z. 1840, p. 227, et 1848, p. 11.
300. CHLOROSPINGUS CANIGULARIS (Lafr.), R. Z. 1848, p. 11.
301. CHLOROSPINGUS FLAVIGULARIS, Sclater, Rev. et Mag. de Zool. 1852, p. 8; Cont. Orn. 1852, p. 131, pl. 98.
302. CHLOROSPINGUS ATRIPILEUS (Lafr.), R. Z. 1842, p. 335.
303. CHLOROSPINGUS RUBRIROSTRIS (Lafr.), R. Z. 1840, p. 227.
304. CHLOROSPINGUS MELANOTIS, Sclater, P. Z. S. 1854, p. 157, pl. 68.
This seems to be the bird described, but not named, by Prince Bonaparte, Att. Sc. It. vi. p. 405, sp. 26.
305. CHLOROSPINGUS SUPERCILIARIS (Lafr.), R. Z. 1840, p. 227.—*Hylophilus leucophrys*, Lafr. R. Z. 1844, p. 81.
306. CHLOROSPINGUS VERTICALIS (Lafr.), R. Z. 1840, p. 227.
307. NEMOSIA ALBIGULARIS, Sclater, P. Z. S. 1855, p. 109, pl. xcix..
308. NEMOSIA GUIRA (Linn.).—Pl. Enl. 720. fig. 1. (Mus. P. L. S.).
309. TACHYPHONUS CRISTATUS (Gm.).—Pl. Enl. 7. fig. 2. (Mus. P. L. S.)

310. *TACHYPHONUS BREVIPES* (Lafr.), R. Z. 1846, p. 206.
A female bird, but of what species?

311. *TACHYPHONUS MELALEUCUS* (Sparm.). (Mus. Brit.)

312. *TACHYPHONUS LUCTUOSUS* (Lafr. et d'Orb.).—d'Orb. Voy. pl. 20. (Mus. P. L. S.)

313. *TACHYPHONUS XANTHOPYGIUS*, Sclater, P. Z. S. 1854, p. 154, pl. lxix. (♀), et 1855, p. 83, pl. xc. (♂).—*Lanio auritus*, DuBus, Bull. Acad. Brux. Feb. 1855.

314. *LANIO ATRICAPILLUS* (Gm.).—Pl. Enl. 809. fig. 2. (Mus. P. L. S.)

315. *TRICHTHRAUPIS PENICILLATA* (Spix).—*Tan. penicillata*, Spix, Av. Bras. ii. t. 49.—*Pyranga albicollis*, D'Orb.?—*Pipilopsis* (!) *cristata*, DuBus, Bull. Ac. Brux. Feb. 1855.

I have specimens of this bird from several different localities, but at present can make out of them only one (though rather variable) species. The Bogota bird seems rather smaller and weaker-billed than a Cayenne specimen.

316. *PHÆNICOTHTRAUPIS GUTTURALIS*, Sclater, Ann. Nat. Hist. 1854, p. 24. (Mus. Brit. et Paris.)

317. *LAMPROTES ALBICRISTATA* (Lafr.), R. Z. 1843, p. 132; Mag. de Zool. 1844, Ois. pl. 50.—*Sericossypha sumptuosa*, Less. Echo d. M. S. 1844, p. 302.

318. *PYRANGA ÆSTIVA* (Linn.).

The Bogota skins I have seen seem referable to the North American species rather than the closely-allied *P. saira*, Spix (*azara*, Lafr. et d'Orb.). This bird has already been noticed as far south as Guatemala (P. Z. S. 1837, p. 116).

319. *PYRANGA RUBRA* (Linn.).

Young birds from Bogota of this species are in the British Museum and my own collection.

320. *PYRANGA RUBRICEPS*, G. R. Gray, Gen. Birds, pl. 89.

Afterwards erroneously united by Mr. Gray to *Spermagra erythrocephala*, Sw., which is the same as *Pyranga cucullata*, DuBus. See Bp. Notes sur les Tang. p. 29.

321. *PYRANGA ERYTHROMELAS* (Licht.).—*Tanagra erythromelas*, Licht. Preis-Verz. sp. 69 (1831).—*P. leucoptera*, Trudeau, Journ. Phil. viii. 160.—*P. bivittata*, Lafr. R. Z. 1842, p. 70.—*Phœnisoma ardens*, Tsch. Wieg. Archiv, 1844, p. 287.

If the South American bird is the same as the Mexican (as I believe is the case), Lichtenstein's name is the first for this species.

322. *RAMPHOCELUS DIMIDIATUS* (Lafr.), R. Z. 1838, p. 165.

323. *RAMPHOCELUS FLAMMIGERUS* (Jard.), Ill. Orn. pl. 131 (*dorso postico rubro*).

324. *RAMPHOCELUS CHRYSONOTUS* (Lafr.), Rev. et Mag. de Zool. 1853, p. 246 (*dorso postico aurantio*).

325. *RAMPHOCELUS ICTERONOTUS*, Bp. R. Z. 1838, p. 8 (*dorso postico flavissimo*).

326. *TANAGRA EPISCOPUS* (Linn.).

By this I mean the true *episcopus*. See Mr. Strickland's note in Ann. Nat. Hist. xx. p. 332.

327. *TANAGRA CANA*, Sw. Strickl. Ann. Nat. Hist. xx. p. 332.

328. *TANAGRA PALMARUM*, Max. (Mus. P. L. S.)

329. *DUBUSIA TÆNIATA* (Boiss.), R. Z. 1840, p. 67.

330. *DUBUSIA OLIVICYANEA* (Lafr.), R. Z. 1843, p. 69.

331. *DUBUSIA CYANOCEPHALA* (Lafr. et d'Orb.)?

I have not yet compared the Bogota skins of this species with Bolivian examples, but they seem to agree with a specimen of the same bird in my collection from Peru, and I think it possible that they may be all referred to one species.

332. *COMPSCOMA VICTORINI* (Lafr.), R. Z. 1842, p. 336.

333. *BUTHRAUPIS CUCULLATA* (Jard.), Ill. Orn. n. s. pl. 43.—*Dubusia gigas*, Bp. Rev. et Mag. de Zool. 1851, p. 171.

334. *BUTHRAUPIS EXIMIA* (Boiss.), R. Z. 1840, p. 66.

335. *ANISOGNATHUS LUNULATUS* (DuBus), Bull. Ac. Brux. vi. pt. 1, p. 439 (1839).—*Tanagra* (*Euphonia*?) *constantii*, Boiss. R. Z. 1840, p. 3.—*Aglais erythrotis*, Jard. Ill. Orn. n. s. pl. 36.

336. *ANISOGNATHUS LACRIMOSUS* (DuBus), Esq. Orn. t. 9.—*T. palpebrosa*, Lafr. R. Z. 1847, p. 71. (Mus. Brit.)

337. *IRIDORNIS DUBUSIA* (Bp.).—*I. dubusia*, Bp. Consp. p. 239; Contr. Orn. 1852, p. 127, pl. 94.—*Arremon rufivertex*, Lafr. R. Z. 1842, p. 335.

338. *CALLISTE CÆLICOLOR*, Sclater, Cont. Orn. 1851, p. 51.

339. *CALLISTE AURULENTA* (Lafr.), R. Z. 1843, p. 90.

340. *CALLISTE SCLATERI*, Lafr. Rev. et Mag. de Zool. 1854, p. 307.

341. *CALLISTE GUTTULATA*, Bp. Compt. Rend. 1851, p. 76.—*C. chrysophrys*, Sclater, Contr. Orn. 1851, p. 24, pl. 69, fig. 2.

342. *CALLISTE XANTHOGASTRA*, Sclater, Contr. Orn. 1851, p. 23.

343. *CALLISTE RUFICAPILLA*, Sclater, Contr. Orn. 1851, p. 61.
344. *CALLISTE PARZUDAKII*, Lafr. R. Z. 1843, p. 97.
345. *CALLISTE GYROLOIDES*, Lafr. R. Z. 1847, p. 279.
346. *CALLISTE BOLIVIANA*, Bp. Compt. Rend. 1851, p. 80.
347. *CALLISTE INORNATA*, Gould, sp. nov.*
348. *CALLISTE RUFICERVIX*, Prevost, Voy. Venus, Ois. pl. 5, fig. 1.
349. *CALLISTE ATRICAPILLA*, Lafr. R. Z. 1843, p. 290.—*Procnias heinei*, Cab. Mus. Hein. p. 31, (avis jr.).
350. *CALLISTE NIGRIVIRIDIS* (Lafr.), R. Z. 1843, p. 69.
351. *CALLISTE THALASSINA*, Strickl. Ann. Nat. Hist. xiii. p. 419.—*Aglais wilsoni*, Lafr. R. Z. 1847, p. 71, et Icon. Orn. pl. 56. fig. 2.
352. *CALLISTE CYANICOLLIS* (Lafr. et d'Orb.).—d'Orb. Voy. p. 271, pl. 25, fig. 1.
353. *CALLISTE LABRADORIDES*, Boiss. R. Z. 1840, p. 67.—Voy. Venus, Ois. pl. 5, fig. 2.
354. *CALLISTE VENUSTA*, Sclater, P. Z. S. 1854, p. 248.
355. *DIVA VASSORI* (Boiss.), R. Z. 1840, p. 4.—Sclater, Tan. Cat. Spec. p. 13.
356. *DIVA ALBIVENTRIS* (Sclater), Rev. et Mag. de Zool. 1852, p. 8; Cont. Orn. 1852, p. 131, pl. 100, fig. 12.
357. *CHLOROCHRYSA CALLIPARÆA* (Tsch.), F. P. p. 202.—Cont. Orn. 1851, p. 99, pl. 73, fig. 1.
358. *TANAGRELLA ELEGANTISSIMA*, Verreaux, Rev. et Mag. de Zool. 1853, p. 195.
359. *CHLOROPHONIA LONGIPENNIS* (DuBus).—*Euphonia longipennis*, DuBus, Bull. Ac. Brux. Feb. 1855.
- I have always hesitated to separate this bird from the Brazilian *C. viridis*. As M. DuBus has done so, however, I adopt his name, as I think it possible the species may be really distinct.

* Mr. Gould has kindly furnished me with the following note on this peculiar species, which he considers new:—

"Crown of the head, back of the neck, back, throat and flanks very dark grey: rump and upper tail grey tinged with blue: on the shoulders a bright spot of shining blue: wings and tail brownish-black: centre of abdomen and under tail-coverts buffy white: bill and legs black. Total length $4\frac{1}{2}$ inches; bill $\frac{1}{16}$; wing $2\frac{1}{4}$; tail $1\frac{1}{4}$; tarsus $\frac{1}{8}$.

"Remark.—This little unornamented bird belongs to that division of the *Calliste* to which the term *Euprepiste* has been applied, and of which *C. mexicana* and *boliviana* are types."

360. *CHLOROPHONIA PRETREI* (Lafr.), R. Z. 1843, p. 97; Mag. de Zool. 1842, pl. 42 (♂).—*Euph. pyrrhophrys*, Selater, Contr. Orn. 1851, p. 89. pl. 75. fig. 2. (♀).

361. *EUPHONIA NIGRICOLLIS* (Vieill.), Cont. Orn. 1851, pl. 75. fig. 1. p. 83.

362. *EUPHONIA MINUTA*, Cab.—(*E. pumila*, Bp.—*E. strictifrons*, Strickl.) (Mus. Brit.).

363. *EUPHONIA XANTHOGASTRA*, Sund.—Cont. Orn. 1851, p. 85. (Mus. P. L. S.)

364. *EUPHONIA CONCINNA*, Selater, P. Z. S. 1854, p. 98 et Tan. Cat. Sp. App. p. 16.

365. *EUPHONIA MELANURA*, Selater, Cont. Orn. 1851, p. 86.

Mr. Gould's collection contains specimens of a black-tailed *Euphonia* from Bogota agreeing nearly with the Amazon bird, except that the yellow extends rather farther back on the head, and the bill is somewhat stouter.

366. *CATAMBLYRHYNCHUS DIADEMA*, Lafr. R. Z. 1842, p. 301. Gray's Gen. pl. 93.—*Bustamantia capitaurea*, Bp. Att. Sc. Ital. vi. p. 406 (1844).

FRINGILLINÆ.

367. *CHRYSONITRIS COLUMBIANA* (Lafr.), R. Z. 1843, p. 292.

368. *CHRYSONITRIS SPINESCENS*, Bp. Consp. p. 517.

369. *SYCALIS AUREIPECTUS*, Bp. Notes Orn. p. 17.

To this species I refer, though with some doubt, a Bogota *Sycalis*, of which there are examples in the British Museum and my own collection.

370. *PHONIPARA PUSILLA* (Sw.).—*Tiaris pusillus*, Sw. Phil. Mag. 1827, p. 438.

Olivacea : pileo capitis lateribus gutture imo et pectore toto nigris : superciliis curvis et gula aureis.

This continental species appears to me to be distinct from the *Ph. olivacea* of the Antilles. The latter has the head olive like the back, and the black on the breast confined to a patch beneath the golden throat, the mid-belly being nearly white.

Phonipara canora * is a third rather rare and quite different species.

371. *CATAMENIA ANALIS* (Lafr.).—*Fringilla analis*, Lafr. R. Z. 1843, p. 291, Bp. Consp. p. 493.

* Bp. Consp. p. 494; Brown, Ill. Zool. t. 24. fig. 1. A specimen of this bird is in the Neufchatel collection, and Mr. Strickland once informed me that Mr. Brown's original type is still extant in the Newcastle Museum.

372. VOLATINIA JACARINA (Linn.)?

Nigro-chalybea : *pennis paucis ad campterium albis* : *tectricibus subalaribus nigris*. (Mus. P. L. S.)

373. CORYPHASPIZA PILEATA (Max.).—*Lophospiza pileata*, Bp. Consp. p. 471. (Mus. P. L. S.)

EMBERIZINÆ.

374. PHRYGILUS GEOSPIZOPSIS (!) (Bp.).—*Passerculus geospizopsis*, Bp. Notes Orn. p. 21 (♀)—(♂) *cinereus unicolor*—(♀) *fuscorufescens* ; *subtus albidus* ; *fusco toto-striatus*.

I expect it will be found that this bird is an inhabitant of the high mountain ranges. It would appear to be nearly allied to *P. unicolor* (d'Orb. et Lafr.), or certainly to the bird figured under that name by Sir Wm. Jardine (Cont. Orn. 1849, pl. 20). Prince Bonaparte has named and described the female only. There are specimens of both sexes in the British Museum.

375. ZONOTRICHIA PILEATA (Bodd.).—Pl. Enl. 386. fig. 2.—*Z. matutina*, auct.

One of the most universally distributed South American Passeres, being found, I believe, in every part of that continent.

ALAUDINÆ.

376. OTOCORYS PEREGRINA, Sclater, P. Z. S. 1855, p. 110. pl. cii. The only South American bird of the subfamily.

PYRRHULINÆ.

377. SPERMOPHILA LUCTUOSA, Lafr. R. Z. 1843, p. 291.

378. SPERMOPHILA OLIVACEO-FLAVA, Lafr. R. Z. 1843, p. 291, et 1846, p. 207.

379. SPERMOPHILA.

A species (of which there is a specimen in the British Museum) with a rufous crissum. I have not yet made it out.

380. SPERMOPHILA MINUTA (Linn.).—Pl. Enl. 319. fig. 2 ; Bp. Consp. p. 495. (Mus. Brit.). Also from *S. Martha* (Verreaux).381. SPERMOPHILA GUTTURALIS (Licht.).—*Phonipara gutturalis*, Bp. Consp. p. 494.

I have seen Bogota specimens of this bird, which appears rather a true *Spermophila* than a *Phonipara*.

RAMPHASTIDÆ.

382. RAMPHASTOS AMBIGUUS, Sw. Zool. Ill. pl. 168. Gould, Mon. ed. 2. pl. 5.

383. *RAMPHASTOS CUVIERI*, Wagl. S. A. sp. 5. Gould, Mon. ed. 2. pl. 8.

384. *RAMPHASTOS CITREOLEMUS*, Gould, P. Z. S. 1843, p. 147; Gould, Mon. ed. 2. pl. 9.

385. *PTEROGLOSSUS CASTANOTIS*, Gould, P. Z. S. 1833, p. 119; Gould, Mon. ed. 2. pl. 19.

386. *ANDIGENA NIGRIROSTRIS* (Waterh.) P. Z. S. 1839, p. 111; Gould, Mon. ed. 2. pl. 39.

387. *AULACORHAMPHUS CASTANEIRHYNCHUS*, Gould, Ann. Nat. Hist. ix. p. 238; Mon. ed. 2. pl. 44.

388. *AULACORHAMPHUS ALBIVITTA* (Boiss.), R. Z. 1840, p. 70. Gould, Mon. ed. 2. pl. 49.

PICIDÆ.

389. *DRYOCOPUS POLLENS* (Bp.).—*Picus pollens*, Bp. Att. Sc. It. vi. p. 406.—*Campephilus waltherbii*, Gray's Gen. pl. 108. Bp. Consp. p. 133.

390. *DRYOCOPUS GRAYI* (Malh.), Pr. Soc. d'H. N. de Moselle, 1849.

391. *DRYOCOPUS HÆMATOGASTER*, Tsch. F. P. p. 265. pl. 25. (Mus. P. L. S.)

392. *CHRYSOPTILUS CANIPILEUS* (Lafr. et d'Orb.).—d'Orb. Voy. p. 379. pl. 63. fig. 2.

The female of this species is figured by d'Orbigny. A Bogota male specimen in my possession differs in having broad red superciliary and mental bands.

393. *CHRYSOPTILUS PUNCTIGULA* (Bodd.).—Pl. Enl. 613.—*C. cayennensis*, Bp. Consp. 122. (Mus. Lugd. ex Bogota.)

394. *CHLORONERPES CECILII* (Malh.), Rev. et Mag. de Zool. 1849, p. 538.

395. *CHLORONERPES FUMIGATUS* (Lafr. et d'Orb.).—d'Orb. Voy. p. 380. pl. 63. fig. 1.

I have a pair of birds from Bogota which seem to be referable to this species. Is not *P. oleaginus*, Wagler, ex Mexico, very closely allied to this?

396. *MELANERPES CRUENTATUS* (Bodd.).—Pl. Enl. 694. fig. 2.—*M. hirundinaceus*, Bp. Consp. p. 116. (Mus. P. L. S.)

397. *MELANERPES FLAVIGULA* (Malh.).—*Picus melanopogon*, Lafr. R. Z. 1844, p. 81.—*Melampicos flavigula*, Malh. Rev. et Mag. de Zool. 1849, p. 542.

398. *CENTURUS SUBELEGANS*, Bp. P. Z. S. 1837, p. 109, et Consp. p. 121.—*C. rubriventris*, Sw. An. in Men. p. 354 (1837).

My Bogota specimens of this bird are rather smaller in dimensions than Venezuelan examples. M. Verreaux has the same bird from Santa Martha. I have not yet had an opportunity of comparing Central American specimens.

399. *COLAPTES ELEGANS* (Fraser), P. Z. S. 1840, p. 60.—*Picus ricolii*, Boiss. R. Z. 1840, p. 36. Bp. Att. Sc. It. vi. p. 406.

PICUMNINÆ.

400. *PICUMNUS GRENADENSIS*, Lafr. R. Z. 1845, p. 7.

401. *PICUMNUS SQUAMULATUS*, Lafr. Rev. et Mag. de Zool. 1854, p. 208.

402. *PICUMNUS OLIVACEUS*, Lafr. R. Z. 1845, p. 7.

CAPITONIDÆ.

403. *CAPITO PERUVIANUS* (Cuv.), Ragn. An. (1829), i. p. 458. Le Vail. Barb. p. 63. pl. 27. (Mus. Brit.)

404. *CAPITO RICHARDSONI*, G. R. Gray, Gen. Birds, pl. 106.

405. *CAPITO BOURCIERI* (Lafr.), R. Z. 1845, p. 179; Rev. et Mag. de Zool. 1849, p. 116. pl. 3.

406. *CAPITO HARTLAUBI* (Lafr.), R. Z. 1845, p. 180; Rev. et Mag. de Zool. 1849, p. 176. pl. 6.

PSITTACIDÆ.

407. *ARA SEVERA* (Linn.).

In Mr. S. Steven's Bogota collection.

408. *CONURUS WAGLERI*, G. R. Gray, Gen. Birds, pl. 102. (Mus. Paris.)

409. *CONURUS CALLIPTERUS*, Mass. R. Z. 1854, p. 72. (Mus. Paris.)

410. *PSITTOVIUS TOVI* (Gm.)? (Mus. P. L. S.)

411. *PSITTACULA CONSPICILLATA*, Lafr. R. Z. 1848, p. 172. (Mus. Paris et P. L. S.)

412. *EUOPSITTA AMAZONINA* (Des Murs), R. Z. 1845, p. 207; Icon. Orn. pl. 15; Bp. Tabl. d. Perr. p. 8.

413. *PIONUS CHALCOPTERUS* (Fraser), P. Z. S. 1840, p. 59. Bp. Att. Sc. It. vi. p. 403.

414. *PIONUS SENILOIDES* (Mass.), R. Z. 1854, p. 73. Mus. Paris.)

415. *PIONUS COBALTINUS* (Mass.), R. Z. 1854, p. 74.
Similis P. menstruo : an vere distinctus ?

CUCULIDÆ.

416. *CROTOPHAGA ANI* (Linn.). Mus. Paris et P. L. S.
 417. *PIAYA MEHLERI*, Bp. Consp. p. 110.
 418. *COCYZUS LANGSBERGI*, Bp. Consp. p. 112.

COLUMBÆ.

419. *CHLORÆNAS ALBILINEA*. Bp. Consp. ii. p. 51.
 420. *GEOTRYGON MYSTACEA* (Temm.), Fig. pl. 56. Bp. Consp. ii. p. 71.
 421. *GEOTRYGON LINEARIS* (Prevost).—Knip et Prev. Fig. pl. 55. p. 104. Bp. Consp. ii. p. 71.
 422. *LEPTOPTILA VERREAUXI*, Bp. Consp. ii. p. 73r
 423. *CHAMÆPELIA GRANATINA*, Bp. Consp. ii. p. 77—nonne *Ch. passerinæ* fœm. sive jr. ?

GALLINÆ.

424. *TINAMUS JULIUS*, Bp. Notes Orn. p. 93. Hartlaub in Cab. Journ. für Orn. 1854, p. 410.
 From Bogota and Ecuador.
 425. *PENELOPE PIPEL* (Gm.).
 I have examined a specimen of this bird contained in a collection received from Bogota by Mr. S. Stevens.
 426. *EUPSYCHORTYX LEUCOTIS*, Gould, Mon. Odont. pl. 10.
 427. *EUPSYCHORTYX PARVICRISTATUS*, Gould, Mon. Odont. pl. 12.
 428. *ODONTOPHORUS MARMORATUS*, Gould, Mon. Odont. Introd. p. 22.

GRALLÆ.

429. *VANELLUS CAYENNENSIS* (Gm.), Pl. Enl. 836. (Mus. P. L. S.)
 430. *TIGRISOMA TIGRINUM* (Gm.).
 In Mr. S. Stevens' Bogota collection.
 431. *TOTANUS MACROPTERUS* (Spix) ? Av. Bras. ii. p. 76. pl. 92. (Mus. P. L. S.)
 432. *GLOTTIS MELANOLEUCA* (Gm.).—*T. vociferus*, Wils. Am. Orn. t. 58. fig. 5. (Mus. P. L. S.)

ANSERES.

433. *MERGANETTA COLUMBIANA*, Des Murs, R. Z. 1845, p. 179; Icon. Orn. pl. 6.

Is this bird distinct from *M. armata*?

434. *RHYNCHASPIS CLYPEATA* (Linn.).

Mr. Gould informs me that he has recently examined specimens of this bird killed near Bogota. Its occurrence as far south as Nicaragua has already been noticed by Prince Bonaparte. (Notes Orn. p. 94.)

435. *QUERQUEDULA CYANOPTERA* (Vieill.).

This duck seems to extend from the most southern portions of the South American continent into Texas and as far north as Louisiana: see Cassin's Illustrations, pt. 3. pl. 15. I have a female from Bogota, and the MM. Verreaux have received examples of the same bird from Santa Martha.

	Total.
Accipitres	16
Passeres	365
Scansores	37
Columbæ	5
Gallinæ	5
Struthiones	0
Grallæ	4
Anseres	3

2. ON SOME NEW SPECIES OF BIRDS COLLECTED BY MR. M'GILLIVRAY. BY JOHN GOULD, F.R.S. ETC.

In exhibiting a portion of the first collection of birds which has been sent to this country by Mr. John M'Gillivray, the naturalist attached to H. M. surveying ship 'Herald,' Captain Denham, I have to remark, that it comprises several species of especial interest, particularly some obtained on the Isle of Pines, and on Lord Howe's Island. It also comprises a new form among the *Turdidæ* or Thrushes, from that isolated spot the island of Tristan d'Acunha, which presents a union of the characters of the genera *Turdus*, *Chamaea* and *Oreocincla*. This new bird I propose to characterize under the generic and specific appellations of *Nesocichla eremita*. Among the birds from Lord Howe's Island is a singular species of *Merula* or Blackbird, nearly allied in form to, but very different in colour from, the *Merula nestor* of Norfolk Island; to this species the specific name of *vinitincta* is assigned. From the same island are two distinct species of *Zosterops*, entirely new to science. They differ from any other species of the genus which has come under my notice, one of them being a very large bird for a *Zosterops*, and the other a much smaller species, being nearly allied to, but distinct from, the Australian *Zosterops dorsalis*: to these

two species I give the names of *Z. strenuus* and *Z. tephroleurus*. A beautiful Parrakeet from Cape York, nearly allied to *Platycercus palliceps*, I propose to name *Platycercus cyanogenys*. Among the birds from the Isle of Pines is a very beautiful Pigeon, appertaining to the genus *Ptilinopus*. This bird, with several others of even greater interest, I propose to make the subjects of a second paper.

Genus NESOCICHLA.

Bill strong, more powerful than in the genus *Turdus*; gonys nearly straight, with a small notch near the tip in the upper mandible; culmen gradually descending from the base; nostrils seated in an oval depression at the base of the upper mandible; wings short, somewhat concave; first primary very small; the third, fourth and fifth equal and the longest; tail rather shorter than in *Turdus*, and the feathers rather pointed; tarsi very strong, toes strong and much lengthened, particularly the hinder one; front of the tarsi scutellated; under part entire.

This form differs from all others in the great family of the Thrushes, and appears to partake of the characters of the genera *Turdus*, *Chamaea*, and *Oreocinclla*.

NESOCICHLA EREMITA.

Head and all the upper surface, wings and tail dark sandy-brown, with a darker shade in the centre of each feather, but the primaries have paler edges, and the greater coverts and secondaries are tipped with sandy buff; lores and cheeks rufous; feathers of the under surface deep buff at the base, with a lengthened pear-shaped mark of brown down the apex of each feather, these marks being so large and thickly placed as to give the whole a mottley appearance; on the throat these marks somewhat resemble stræ; thighs buff; bill black; tarsi reddish-brown, toes darker.

Total length, $8\frac{1}{2}$ inches; bill, $1\frac{1}{2}$; wing, $3\frac{1}{2}$; tail, 3; tarsi, $1\frac{1}{2}$.

Hab. The island of Tristan d'Acunha.

Remark.—This bird is about the size of the common Seng-thrush, *Turdus musicus*, and similar to it in appearance; on examination, however, it will be found to differ very considerably in structure.

MERULA VINITINCTA.

The male has the head and nape blackish-brown, upper surface and wing-coverts reddish-brown; wings brown margined with olivaceous; tail brown; throat dark bluish grey; under surface vinaceous red; bill bright gamboge-yellow; eye-lash yellow; tarsi and toes yellow.

Total length, 8 inches; bill, 1; wing, $4\frac{1}{2}$; tail, $3\frac{3}{8}$; tarsi, $1\frac{1}{4}$.

The female is very similar, but is of a somewhat paler tint, and has only a trace of the black hood of the male.

Hab. Lord Howe's Island.

Remark. Of the same form, and somewhat allied to the *Merula nestor* of the Norfolk Island.

ZOSTEROPS TEPHROPLEURUS.

Head and upper surface bright olive-green, with a wash of grey across the shoulders; wings and tail slaty brown, margined with olive-green; throat dull yellow; around the eyes a circle of white feathers, below which is a mark of black; under surface pale vinaceous brown, becoming gradually paler on the lower part of the abdomen, and passing into the pale yellow of the under tail-coverts.

Total length, $4\frac{1}{2}$ inches; bill, $\frac{1}{2}$; wing, $2\frac{3}{8}$; tail, $2\frac{1}{4}$; tarsi $\frac{3}{4}$.

Hab. Lord Howe's Island.

Remark. This species is allied to *Z. dorsalis*, but is of a somewhat larger size, and is less richly coloured on the flanks.

ZOSTEROPS STRENUUS.

Head and upper surface bright olive-green, with a wash of dark grey across the shoulders; wings and tail slaty-brown, margined with greenish olive; eyes surrounded by the usual ring of white feathers, beneath which is a narrow line of black; chin and throat yellow; flanks pale vinaceous; centre of the abdomen nearly white; under tail coverts pale yellow; bill and feet bluish black.

Total length, $5\frac{1}{2}$ inches; bill, 1; wing, $2\frac{1}{4}$; tail, $2\frac{1}{4}$; tarsi, $\frac{1}{2}$.

Hab. Lord Howe's Island.

This is by far the largest species of the genus yet discovered.

PLATYCERCUS CYANOGENYS.

Crown of the head pale sulphur-yellow; cheeks cerulean blue; feathers of the nape, back and scapularies black, broadly margined with sulphur-yellow, stained with green on the lower part of the back; rump and upper tail coverts greenish yellow, with an extremely narrow fringe of black at the tip of the feathers; shoulder and greater wing-coverts deep blue; lesser coverts black, bordered with deep blue; primaries and secondaries blackish-brown, the basal half of their external webs deep blue, the apical half pale blue; tertiaries black, broadly margined with greenish yellow; breast pale greenish yellow, abdomen light greenish blue; all the feathers of the under surface slightly fringed with black; under tail coverts scarlet, narrowly margined with yellow; two middle tail-feathers greenish blue; the next on each side blue, slightly tipped with pale blue; the remainder blackish brown at the base of their internal webs, and deep blue externally; their apical portions being beautiful pale blue.

Total length, 13 inches; wing, $6\frac{1}{4}$; tail, 7; tarsi, $\frac{3}{4}$.

Hab. Cape York, north-east coast of Australia.

Remark. This species offers a very close alliance to *Platycercus palliceps*, but differs in having no trace of scarlet on the forehead, in the green tinge of the borderings of the feathers of the back, in the greenish yellow of the breast, and in having the cheeks blue instead of light yellow.

3. SUR LE GENRE *GALEOMMA*, *Turton*. PAR G. P. DESHAYES.

Lorsque Turton institua le genre *Galeomma* une seule espèce était connue, et c'est d'après elle que les caractères génériques furent établis : une seconde espèce, décrite par Lamarck sous le nom de *Psammobia aurantia*, dut être introduite dans le genre, lorsque nous en eumes reconnue les véritables caractères. Peut-être est-ce aussi à côté d'elle que viendra se ranger le *Psammobia vitrea* de M. Quoy ; il serait possible cependant que cette espèce appartint à notre genre *Scintilla*. Quant à l'espèce de M. Philippi, elle est également incertaine pour nous de sorte que le genre était borné à deux espèces certaines et à deux espèces incertaines. On pouvait supposer d'après cela que le genre *Galeomma* n'était point destiné à s'enrichir beaucoup ; aussi avons nous été bien surpris en examinant la magnifique collection de M. Cuming, d'y rencontrer un grand nombre de *Galeomma* nouveaux. De cet examen résulte que le genre renferme actuellement quatorze espèces, et qu'il devient nécessaire d'apporter quelques modifications dans l'énoncé des caractères génériques.

En effet la première espèce connue, le *Galeomma Turtoni*, Sow., a une charnière simple et sans dents, tandis que la plus grande partie des espèces nouvelles ont cette partie accompagnée d'une charnière articulée très semblable à celle de notre genre *Scintilla* ; un peu différente cependant, car ici les dents sont égales de chaque côté de la charnière et sur chaque valve ; par leur saillie elles contribuent à augmenter la profondeur de la fossette du ligament, sur le bord de laquelle elles s'élèvent. Sous le rapport de la charnière, le genre *Galeomma* pourrait se partager en deux sections ; dans l'une les espèces à charnière dentée seraient rangées, dans l'autre les espèces édentules.

L'un des caractères les plus remarquables des *Galeomma* consiste dans cet énorme baillement du bord inférieure de la coquille. Que l'on suppose une coquille ordinairement close coupée en deux d'avant en arrière, et par cette ablation de la moitié inférieure elle offrira un baillement comparable à celui qui est naturel dans le *Galeomma*. Cette particularité annonce chez l'animal qui construit une coquille si singulière, une organisation toute spéciale, et c'est en effet ce que l'observation a démontré. Dans la série des espèces nouvelles de la collection de M. Cuming ce caractère n'a pas montré une fixité absolue ; une seule s'est rencontrée avec tous les caractères du *Galeomma Turtoni*, les autres ont le baillement en proportion plus étroit, car lorsque l'on regarde la coquille du côté du baillement, on voit que l'ouverture est plus étroite que la convexité ventrale ; dans quelques espèces l'ouverture devient plus étroite encore et plus courte que les valves, et de cette manière s'établit un passage insensible entre les genres *Scintilla* et *Galeomma*. Aussi on doit se demander s'il y a réellement une interruption entre les deux genres, et quel sera le caractère qui devra dominer. Par la charnière les deux genres se touchent, ils se confondent aussi par le baillement des valves que l'on voit grandir de la manière la plus insensible.

Le premier *Galeomma* connu a offert à la surface extérieure, un système d'ornementation particulier que nous avons supposé devoir persister dans les autres espèces ; mais ce moyen de limiter le genre nous échappe à son tour. Si le plus grand nombre des espèces offrent des caractères analogues, il en est d'autres qui étant baillantes, sont cependant lisses et brillantes comme les *Scintilla*. Ces dernières espèces appartiennent-elles au genre *Scintilla* ? alors le caractère si remarquable du baillement des valves perdrait presque toute sa valeur pour les *Galeomma*. Si au contraire on maintient dans le genre toutes les espèces baillantes, en voici quelques unes qui, à part ce caractère, sont de véritables *Scintilla*. Il est difficile, comme on le voit, de se décider entre ces deux manières d'envisager la question. Cependant nous admettons dans le genre *Galeomma* toutes les coquilles baillantes inférieurement, et nous proposons de les partager en trois sections de la manière suivante :

A. Espèces à charnière articulée.

I. Espèces lisses et brillantes à ouverture médiocre :—

1. *Galeomma ambigua*.
2. ——— *splendida*.
3. ——— *polita*.
4. ——— *Layardi*.

II. Espèces striées à ouverture plus grandes :—

5. ——— *indecora*.
6. ——— *argentea*.
7. ——— *angusta*.
8. ——— *paucistriata*.
9. ——— *formosa*.
10. ——— *chloroleuca*.
11. ——— *inflata*.

B. Espèces à charnière simple :—

12. ——— *Macrochisma*.
13. ——— *Turtoni*.

Je ne mentionne ici que les espèces qui me sont particulièrement connues, et sur lesquelles j'ai pu faire une étude attentive.

1. GALEOMMA AMBIGUA, Desh. *G. testa transversa, ovato-oblonga, turgidula, æquilaterali, pallide albo griseo flavidula, intus opaca, albicante, nitida, transversim substriata, minutissime albo puncticulata, puncticulis depressis irregulariter sparsis ad marginem inferiorem evanidis; latere antico paulo angustiore; margine superiore angusto, recto, inferiore recto, parallelo; margine inferiore hiante, hiatu lanceolato, angusto; cardine sinistro inæqualiter bidentato, dentibus parallelis; dextro bidentato, dentibus minutis subæqualibus divaricatis; dente posticali brevissimo, truncato, subquadrangulari.*

Hab. Insula Ticaoica Philippinarum (Cuming); portus Essingtonensis (Jukes).

2. *GALEOMMA SPLENDIDA*, Desh. *G. testa ovato-transversa, angusta, depressa, subæquilaterali, albo-lactea, pellucida, tenuissima, fragili, nitente ad apices vitrea, transversim irregulariter striata et zonulis opacioribus notata; latere antico paulo breviori; umbonibus minutissimis, obtusis, viz prominulis; margine superiore recto, inferiore hiantè parallelo; hiatu elongato, angusto utrinque acuminato; cardine angusto, dentibus duobus minutissimis, inæqualibus in valvula sinistra; dente posticali subquadrangulati, brevi, obsoleto; ligamento minutissimo.*

Hab. Insula Burias Philippinarum.

Espèce appartenant aux *Galeomma* par le baillement des valves, mais conservant la charnière des *Scintilla*.

3. *GALEOMMA POLITA*, Desh. *G. testa ovato-transversa, depressa, subæquilaterali, tenuissima, fragili, albo-pellucida, polita, nitida, transversim substriata; latere antico paulo breviori cum postico æqualiter obtuso; margine superiore recto inferiore paululum arcuato, parallelo, hiatu inferiore angusto; cardine bidentato in valvula sinistra; dentibus minutissimis subæqualibus, dente posticali obsoleto; ligamento minutissimo.*

Hab. Insula Samar Philippinarum.

4. *GALEOMMA LAYARDI*, Desh. *G. testa elongato-transversa, ovata, æquilaterali, alba, translucida, zonulis angustis translucidioribus interrupta, punctulis numerosissimis confusis notata; latere antico paulo angustiore; umbonibus minimis, obtusis, brevibus non prominentibus; margine superiore recto, inferiore æqualiter recto parallelo, hiatu magno in medio lato, fere totam longitudinem marginis inferioris occupante; cardine utroque latere unidentato; dentibus validis obtusis; dente posticali lato.*

Hab. Insula Ceylonica (*Layard*).

5. *GALEOMMA INDECORA*, Desh. *G. testa elongato-transversa, angusta, extremitatibus obtusa, æquilaterali, albo pallide flavidula, convexiuscula, inferne late hiantè, obsoletissima, longitudinaliter striata; striis distantibus prominulis, angustissimis; umbonibus minimis, obtusis, brevibus, viz prominulis; margine superiore recto, inferiore parallelo; latere antico paulo angustiore et attenuato; cardine angusto utroque latere unidentato; dentibus minutis subæqualibus, obtusis; ligamenti fossula brevissima, angustissima.*

Hab. Insula Masbate dicta.

6. *GALEOMMA ARGENTEA*, Desh. *G. testa ovato-transversa, angusta, compressiuscula, subæquilaterali, tenui, pellucida, intus nitidissima, albo-argentea margaritacea, extus alba, argutissime striata, striis numerosis, angustis, prominulis, superioribus divaricatis ad marginem superiorem ascendentibus; margine su-*

periore recto, inferiore convexiusculo; latere antico paulo brevior et angustior; cardine angusto utroque latere unidentato, dentibus minimis subæqualibus; ligamento minutissimo, convexo.
Hab. Insula Boholensis Philippinarum.

7. *GALEOMMA ANGUSTA*, Desh. *G. testa oblongo-transversa, angusta, turgidula, æquilaterali, albo squalide flavidula, æqualiter extremitatibus obtusa, longitudinaliter striata; striis tenuibus, æqualibus, continuis, minutissime granulosis, superioribus divaricatis oblique ascendentibus; margine superiore recto, inferiore æqualiter recto, parallelo; hiatu inferiore lanceolato totam longitudinem testæ occupante; cardine minimo, utroque latere unidentato; dente posticali minutissimo.*
Hab. Insula Boholensis Philippinarum.

8. *GALEOMMA PAUCISTRIATA*, Desh. *G. testa elongato-transversa, convexiuscula, æquilaterali, albo-lactea, translucida, longitudinaliter tenuissime striata, striis minimis obsoletis distantibus, prominulis, ad marginem inferiorem brevioribus interjectis, superioribus paululum undulatis, divaricatis, oblique ascendentibus; latere antico paulo angustior, umbonibus minimis, acutis, oppositis, vix prominentibus; margine superiore atque inferiore rectis, parallelis; margine inferiore hiatu mediocri aperto; cardine minutissimo, antice bidentato, dentibus obtusis obsoletis; dente postico oblongo, brevi.*
Hab. Insula Samar Philippinarum.

9. *GALEOMMA FORMOSA*, Desh. *G. testa oblonga, ovato-transversa, tumidula, inæquilaterali, intus extusque aurantia, longitudinaliter et tenuissime striata; striis superne evanidis, inferne dichotomis, distantibus, prominulis, capillaceis, superioribus divaricatis, numerosioribus, ascendentibus; margine superiore recto, inferiore paulo arcuato, parallelo; hiatu inferiore magno, lanceolato; latere antico paulo brevior et angustior; umbonibus minutissimis, oppositis, vix prominulis; cardine minimo, utroque latere unidentato; dentibus obtusis.*
Hab. Australia septentrionalis (Jukes).

10. *GALEOMMA CHLOROLEUCA*, Desh. *G. testa elongato-transversa, ovato-angusta, tumida, æquilaterali, chlorotina, tenui, nitente, argutissime longitudinaliter striata; striis prominulis, angustissimis, capillaceis irregulariter divisis et anastomosis conjunctis, superioribus numerosioribus, divaricatis, oblique ascendentibus; margine inferiore recto, superiore parallelo; margine inferiore in senioribus concaviusculo; cardine minimo, utroque latere unidentato, dentibus æqualibus, obtusis.*
Hab. Insula Samar Philippinarum.

11. *GALEOMMA INFLATA*, Desh. *G. testa ovato-transversa, angusta, turgida, subæquilaterali, intus extusque pallide flava, tenui, opaca, utraque extremitate æqualiter obtusa, subævigata,*

extremitatibus obsolete divaricatim striata, impresso-puncticulata; latere antico paulo longiore et angustiore; margine superiore recto, inferiore excavato, late aperto, valide hiante; cardine utroque latere unidentato; dentibus subæqualibus obtusis minutissimis; ligamento exiguo.

Hab. Insula Masbate dicta.

12. *GALEOMMA MACROCHISMA*, Desh. *G. testa ovato-transversa, angusta, inflata, subæquilaterali, pallide flava, striis numerosis dichotomis, prominentibus longitudinalibus et transversalibus minutis regulariter minutissime decussata; striis superioribus utroque latere divaricatis et ascendentibus; latere postico paulo longiore, attenuato; umbonibus minimis obtusis oppositis; margine superiore recto, inferiore parallelo; hiatu inferiore valvarum maximo totam basim testæ occupante; cardine edentulo; ligamento brevi, minimo.*

Hab. Insula Masbate dicta.

4. SUR LE GENRE SCINTILLA. PAR G. P. DESHAYES.

Genus SCINTILLA, Desh.

Animal ignotum.

Testa ovato-transversa, utroque latere obtusa, aliquantisper paulo hians, tumida, tenuis, nitidissime scintillans, epidermide destituta; margine superiori sæpius recto, inferiori parallelo; cardo angustus, brevis, nunquam in medio emarginatus; in valvula dextra dens cardinalis unicus, porrectus, uncinatus, in sinistra dentes duo inæquales approximati divaricati: internus major, dens lateralis in latere postico, cardine approximatus, brevis, conicus vel subquadrangularis, in altera valvula in fossula dentis bifidi receptus; ligamentum internum, breve, latum, tenue, in sulco angusto obliquo utriusque valvulæ affixa; impressio pallii integra.

Le genre nouveau que nous proposons sous le nom de *Scintilla* mérite d'attirer un moment l'attention des Conchyliologues. Peu connu dans les collections nous l'avons trouvé d'une extraordinaire richesse dans celle de M. Cuming comme le témoignent les 37 espèces dont nous donnons ici la description. Une seule peut-être a été connue de M. Quoy, et décrite par lui dans le voyage de l'*Astrolabe* sous le nom de *Psammobia vitrea*, nous conservons au sujet de cette espèce des doutes légitimes parceque le savant naturaliste la caractérise par deux dents cardinales et un *ligament extérieur*, tandis que dans notre nouveau genre cet organe est toujours intérieur. Le doute au sujet de l'espèce de M. Quoy est d'autant plus regrettable que ce naturaliste donne la figure et la description de l'animal lequel se rapproche de celui des *Galeomma* et s'éloigne considérablement de celui des véritables *Psammobies*. Quoi que

nous eussions le soupçon que l'espèce de M. Quoy appartient à notre nouveau genre, dans l'appréhension de commettre une erreur, nous n'osons nous servir des précieux documents de ce naturaliste pour compléter les caractères du genre par ceux de l'animal.

Les coquilles du genre *Scintilla* ont une apparence particulière qui les distingue assez facilement de tous les autres genres connus ; elles ont de très grands rapports d'un côté, avec les Erycines telles que les a reconstituées M. Recluz, et d'un autre avec les *Galeomma* ; elles sont réellement intermédiaires entre ces deux groupes et les rattachent à la même famille. Toutes ces coquilles sont ovales transverses, oblongues, presque symétriques tant elles sont équilatérales ; les Erycines au contraire sont pour le plus grand nombre obrondes ou ovalaires, mais inéquilatérales et obliques. La surface extérieure dans les *Scintilla* est dépourvu d'épiderme ; elle est lisse et brillante, souvent polie et sans stries ; état particulier qui annonce dans l'animal une organisation spéciale, qui lui permet de renverser les lobes de son manteau sur la coquille et de lui conserver ce poli, ce brillant remarquables. Toutes ces coquilles, d'un médiocre volume, sont minces, fragiles, transparentes, parfaitement équivalves ; la plupart sont parfaitement closes ; il en est d'autres qui sont un peu baillantes dans la région dorsale en avant et en arrière de la charnière, d'autres enfin plus rapprochées des *Galeomma*, chez lesquels se montre un baillement étroit dans la longueur du bord inférieur ; les crochets sont petits, souvent aplatis, opposés et à peine saillants au delà du bord cardinal. Nous avons remarqué dans un certain nombre d'espèces un caractère extérieur que nous n'avons pas eu occasion jusqu'ici de rencontrer dans d'autres coquilles : il consiste en une multitude de très fines ponctuations très nettes, déprimées, d'un blanc opaque sur le test transparent, et souvent tellement rapprochées que la coquille perd ainsi une grande partie de sa transparence.

Indépendamment des caractères généraux et extérieures que nous venons de rappeler, le genre est plus spécialement reconnaissable par la structure de la charnière et les empreintes laissées par l'animal dans l'intérieur des valves.

Le bord dorsal ou cardinal est le plus souvent droit, rarement un peu arqué ; une charnière très petite, très courte surtout, en occupe le centre. Cette charnière constituée à peu près comme celle des Erycines, s'en distingue cependant par ce fait important, qu'elle n'offre jamais cette échancrure plus ou moins large qui coïncide avec la position du ligament. Le bord cardinal dans les *Scintilla* reste droit, mince, étroit, souvent subcylindracé, d'autrefois plus aplati et même creusé d'une gouttière en avant et en arrière de la charnière. Les dents cardinales sont très petites, une seule, rarement deux s'élèvent sur la valve droite ; cette dent unique est ordinairement pyramidale, triangulaire un peu en crochet et pointue au sommet ; deux dents très inégales sur la valve gauche ; elles sont comprimées, l'antérieure la plus petite se projette obliquement vers le bord, l'autre plus épaisse et plus saillante descend perpendiculairement, et occupe la largeur du bord ; quelquefois les deux dents sont parallèles et laissent entre elles un interval très étroit, dans lequel se pose la dent de la

valve opposée. En arrière du ligament et tout près de lui se nombre une dent latérale postérieure, le ligament étant très court ; cette dent par le fait se trouve très rapprochée des cardinales. La dent latérale postérieure est peu variable : elle consiste sur la valve gauche en une saillie courte, tronquée au sommet et tranchée perpendiculairement en arrière, ce qui lui donne une forme quadrangulaire ; dans quelques espèces cette dent s'allonge un peu plus, et devint triangulaire ; sur la valve opposée, la dent est bifurquée, et c'est dans la très petite fossette, qui résulte de la bifurcation que s'interpose la dent de la valve gauche.

Le ligament occupe un très court espace entre les deux parties de la charnière ; il est aplati, sans saillie à l'intérieure ; il s'insère non dans tout l'espace que laissent les dents cardinales et latérales postérieur, mais seulement dans une petite rainure très étroite, oblique d'avant, en arrière et de haut, en bas un peu comparable à la fossette des ostéodermes ou des Lyonsia, mais sans aucune trace d'osselet cardinal. Ce ligament devient parfois tellement exigüe qu'il se rapproche alors de celui des *Galeomma*. Nous avons recherché s'il n'y aurait pas quelque trace d'un ligament extérieur ; nous avons trouvé entre les crochets une très mince pellicule épidermique, qui s'étend d'une valve à l'autre, mais qui ne paraît jouir d'aucune des propriétés du ligament externe, car elle se brise au moindre mouvement des valves, et il n'y a aucune trace de Nymphes pour son insertion.

L'intérieur des valves étant souvent aussi brillant que l'extérieur, et les coquilles étant au reste très minces et transparentes, on aperçoit difficilement les impressions des muscles et du manteau, cependant on peut étudier ces parties dans des individus plus épais et plus opaques. Les impressions musculaires sont peu variables ; elles sont situées dans la région dorsale, et rentrées en avant dans l'intérieur des valves ; elles sont égales, ou presque égales ; le plus souvent circulaires, quelquefois un peu subquadrangulaires, la postérieure surtout. L'impression palléale est simple ; elle est située proche du bord, et le suit parallèlement dans son contour ; rarement elle forme une ligne simple et étroite ; le plus ordinairement elle est large et presque diffuse du côté interne.

La coloration dans le genre *Scintilla* tel qu'il est aujourd'hui connu, est peu variable ; la plupart des espèces sont d'une blanc laiteux translucide, ou d'un corré vitreux, parfaitement transparent ; peu-à-peu la couleur corré devient plus intense passe au jaune blond ou fauve, transparent, et à l'orange pale ; dans un petit nombre d'espèces la coloration est d'une rose pourpré d'une très agréable nuance.

1. SCINTILLA CUMINGII, Desh. *S. testa magna, ovato-transversa, aequaliter striato-rugosa, antice, postice atque ad marginem inferiorem minutissime punctato-granulosa utroque latere superne aequaliter declivi extremitatibus obtusa in margine inferiore tenue et irregulariter denticulata ; umbonibus parvis tumidis, oppositis viz prominentibus ; lamina cardinali lata, dente cardinali*

compresso, elongato in utraque valva, posticali approximato triangulari, abrupte resuto; cicatricula ligamenti angusta, obliqua, brevi.
Hab. Ad littora Panamensia.

Le nom de M. Cuming se retrouve dans presque tous les genres des Mollusques; cela prouve à la fois la reconnaissance des naturalistes et la grandeur des services qu'il a rendus à la science.

2. SCINTILLA JUKESI, Desh. *S. testa magna, ovato-transversa, æquilaterali, subsymmetrica, depressiuscula, utroque latere obtusa subtruncata, paululo hiante, candidissima, hyalina transversim obsolete striata, nitidissima; margine inferiore recto, inferiore leviter convexo, parallelo; cardine angustissimo, subedentulo, dentibus minutis, obsolete; fossula ligamenti angusta, profunda; ligamento cavitae valvarum convexo, prominente.*

Hab. Portus Essingtonensis (Jukes).

3. SCINTILLA CUVIERI, Desh. *S. testa ovato-subrotunda, turgidula, subæquilaterali, tenui, polita, nitidissima, pallide luteo-flavicante, pellucida transversim irregulariter striata; latere antico paulo brevior, obtuso, superne declivi; latere postico latiore dilatato; umbonibus minimis, acutis, oppositis vix prominulis; margine cardinali regulariter arcuato, intus lato et utroque latere canaliculato; dentibus cardinalibus in valvula sinistra duobus inæqualibus approximatis antico minore, in valvula altera dente unico obsolete; dente posticali brevissimo approximato.*

Hab. Bacayon in insula Boholensi Philippinarum.

4. SCINTILLA TIMORIENSIS, Desh. *S. testa late ovata, transversa, subæquilaterali, subsymmetrica, depressa, pallide luteo-citrina, solidula, translucida, polita, nitidissima, obsolete striata, latere antico paulo brevior, postico latiore, æqualiter obtusis paululum hiantibus; umbonibus minimis acutis, vix prominentibus; margine cardinali recto, satis lato; dentibus cardinalibus minutis, inæqualibus, angustis, obliquis, posticali obsolete, fossula ligamenti brevi, lata; cicatriculis muscularibus minimis orbicularibus in parte superiore valvarum.*

Hab. Insula Timoriensis.

5. SCINTILLA SOLIDULA, Desh. *S. testa ovata, compressiuscula, subæquilaterali, symmetrica, polita, nitida, translucida, transversim obsolete striata, albo pallide lutescente vel corneola, superne utroque latere æqualiter arcuata, extremitatibus obtusa, inferne recta; valvulis solidiusculis intus iridescentibus; cardine crassulo dentibus cardinalibus duobus in valvula sinistra obtusis, valde inæqualibus, antico acuto minore in valvula dextra unico, obliquo, conico; posticali brevissimo cardine approximato; fossula ligamenti minima, angusta, brevissima.*

Hab. Tamar, insula Bohol Philippinarum.

6. SCINTILLA OVULINA, Desh. *S. testa ovato-transversa, inflata, solida, incrassata, subæquilaterali, alba vel pallide flavescente,*

nitida, polita substriatave, opaca; latere antico paulo brevior et angustior; umbonibus parvis, obtusis, viz prominulis; margine cardinali arcuato, inferiore recto; cardine incrassato; dentibus duobus in valvula sinistra valde inæqualibus, mediano maximo; dente posticali crasso, brevissimo, cardine approximato; fossula ligamenti brevissima angusta.

Hab. Basay, insula Samar Philippinarum.

7. *SCINTILLA TURGESCENTES*, Desh. *S. testa ovato-subtrigonalis, tumida, turgida, inæquilateralis, crassa, solida, alba, opaca, nitente, obsolete transversim striata; latere antico paulo brevior, obtuso; margine superiore utroque latere arcuato, inferiore recto; umbonibus prominulis, obtusis, oppositis; cardine incrassato lato, in medio profunde emarginato; dentibus cardinalibus in valvula sinistra inæqualibus in altera dente unico crasso obtuso, dente posticali crasso, brevi, obliquo; fossula brevissima, profunda.*

Hab. Sinus Moretonensis.

8. *SCINTILLA TURGIDA*, Desh. *S. testa ovato-transversa, turgida, æquilateralis, subsymmetrica utroque latere obtusa, antice hians, hiatu brevi lanceolato, candidissima, incrassata, opaca, nitidissima; latere antico paulo angustior; umbonibus minimis, obtusis, brevibus; margine inferiore superioreque rectis et fere parallelis; cardine crassato, subdentulo, dentibus obsolete; ligamento minutissimo, brevi.*

Var. β. Testa minore, crassior, dentibus cardinalibus paulo majoribus.

Hab. Basay, in insula Samar Philippinarum.

9. *SCINTILLA SCINTILLANS*, Desh. *S. testa ovato-transversa, convexiuscula, solidula, subæquilateralis, nitida, polita, sub epidermide tenui, pallide glaucescente alba, in medio spatio triangulari vitreo notata; umbonibus minimis acutis, brevibus, viz prominentibus; margine superiore leviter arcuato, inferiore rectiusculo; cardine crassulo, angusto, dentibus cardinalibus in valva sinistra subæqualibus, posticali brevi, compresso, postice truncato, apice obtuso.*

Hab. Insula Bohol Philippinarum.

10. *SCINTILLA CROCEA*, Desh. *S. testa ovata, compressa, inæquilateralis, eleganter crocea, nitida, pellucida, fragilis, polita, zonulis pellucidioribus interrupta; latere antico paulo breviori et angustiori, postico dilatato; margine superiore atque inferiore rectis, parallelis; umbonibus minutis acutis, viz prominentibus; cardine lato, brevi, dentibus cardinalibus approximatis inæqualibus, posticali fere nullo; fossula ligamenti brevissima.*

Hab. Insula Negros Philippinarum.

11. *SCINTILLA FLAVIDA*, Desh. *S. testa lata, ovato-transversa, depressa, subæquilateralis, symmetrica, utroque latere æqualiter obtusa, paulo hians, tenui, fragilis, nitidissima, transversim obsolete et satis regulariter striata, corneo-flavescente, translucida; um-*

bonibus minimis, acutis, viz prominulis, oppositis; cardine angusto, solidulo, brevi; dente cardinali unico in utraque valva; dente posticali compresso valde approximato; fossula ligamenti angusta, brevissima.

Hab. Basay, insula Samar Philippinarum.

12. *SCINTILLA REEVEI*, Desh. *S. testa ovato-transversa, sub-aequilaterali, subsymmetrica, depressiuscula, albo flavidula translucida, irregulariter transversim obsolete striata, nitente, utroque latere aequaliter obtusa, parum hiant; umbonibus brevibus, obtusis, viz prominentibus; margine cardinali recto inferiori aequaliter recto, parallelo; cardine lato in valvula sinistra inaequaliter bidentato; dente mediano majore compresso, in valvula dextra bidentato dente antico majore, dente postico brevissimo, abrupte truncato, in valvula dextra bifido.*

Hab. Bais, in insula Negros Philippinarum.

13. *SCINTILLA TENUIS*, Desh. *S. testa ovato-transversa, depressa, inaequilaterali, albo-translucida, tenuissima, fragili, transversim tenue striata; latere antico breviori, angustiori obtuso, postico superne dilatato, paulo hiant; umbonibus minimis, obliquis acutis; cardine angusto bidentato, altero unidentato; dentibus minimis inaequalibus, obsoletis, posticali brevi, truncato, compresso.*

Hab. Basay, insula Samar Philippinarum.

14. *SCINTILLA PHILIPPINENSIS*, Desh. *S. testa ovato-transversa, compressa, aequilaterali, subsymmetrica, alba pallidissime flavicante, tenui, fragili, transversim inaequaliter striata, nitente; margine superiore inferioreque rectis parallelis; umbonibus minimis, brevibus obtusis, oppositis; cardine solidulo, latiusculo, dentibus cardinalibus, minimis, laterali postico brevi, approximato, truncato; margine cardinali utroque latere canaliculato.*

Hab. Insula Zebuensis Philippinarum.

15. *SCINTILLA STRIATINA*, Desh. *S. testa ovato-transversa, compressa, subaequilaterali, tenuissima, fragili, albo pellucida nitente, transversim tenue et regulariter striata; latere antico paulo brevior et angustior; umbonibus minimis, acutis, brevibus, viz prominulis; margine superiore leviter arcuato, inferiore fere recto; margine cardinali angusto, utroque latere cardinis anguste canaliculato; dentibus minimis, inaequalibus, postico oblongo, compresso, triangulari.*

Hab. Insula Bohol Philippinarum.

16. *SCINTILLA SUCCINEA*, Desh. *S. testa late ovata, tumidula, solida, inaequilaterali, polita, nitida, obsolete striata, succinea, translucida, intus albo leviter velata; latere antico paulo breviori et angustiore, umbonibus minimis obtusis, oppositis; margine superiore brevi, subrecto, inferiore parallelo; cardine crassulo, bidentato, dentibus inaequalibus, posticali fere nullo; cicatriculis muscularibus minimis circularibus.*

Hab. Baclayon in insula Boholensi Philippinarum.

17. *SCINTILLA CANDIDA*, Desh. *S. testa regulariter ovata, transversa, subæquilateralì, subsymmetrica, candidissima, transversim obsolete striata; striis irregularibus nitida, utroque latere æqualiter lata et obtusa; latere antico paulo breviorè; margine cardinali atque inferiori parum arcuatis, parallelis; umbonibus parvulis, acutis vix prominentibus; cardine angusto; dentibus cardinalibus duobus in valvula sinistra subæqualibus; dente posticali elongato, angustissimo, fossula ligamenti brevissima.*

Hab. In insula Burias atque Boholensi Philippinarum.

18. *SCINTILLA PELLICULA*, Desh. *S. testa ovato-subrotunda, depressa, subæquilateralì, tenuissima, pellucida, vitrea, fragili, nitidissima, transversim undato-plicata; plicis latis, undulatis in medio evanescentibus; latere antico paulo breviori, angustiori, obtuso; margine cardinali angustissimo quasi edentulo; dente cardinali unico in valvula dextra, in altera dentibus nullis, dente posticali elongato, obsolete; fossula ligamenti brevissima, angustissima.*

Hab. Insula Boholensis Philippinarum.

19. *SCINTILLA HYDATINA*, Desh. *S. testa ovato-transversa, compressa, æquilateralì, tenuissima, pellucida, vitrea pallidissima flavicante polita, nitente, utroque latere æqualiter obtusa; umbonibus minimis, non prominentibus oppositis; margine cardinali in medio angustissimo, lateraliter latiore, planulato; dentibus duobus in valvula sinistra minutis subæqualibus; dente posticali brevi compresso, subquadrangulati.*

Hab. Bacayon in insula Boholensi Philippinarum.

20. *SCINTILLA CRYSTALLINA*, Desh. *S. testa minima, ovato-transversa, depressiuscula, inæquilateralì, tenuissima, nitidissima, corneo-vitrea, polita, nitente, parum obliqua; latere antico paulo breviorè atque postico superne utroque latere cardinibus dilatatis; umbonibus minimis, angustis, acutis, obliquis; cardine lato, dentibus in valvula sinistra, unico in valvula dextra, dente posticali elongato, angustato, fossula brevissima.*

Hab. Cacagsu in insula Mindanao Philippinarum.

21. *SCINTILLA OPALINA*, Desh. *S. testa ovato-rotundata, transversa, compressiuscula, subæquilateralì, tenuissima, hyalina, fragili, pallide lutescente, polita, nitente, ad margines substriata, ad apices lævigatissima, latere antico paulo breviorè, posteriore tantisper acuminato; cardine angustissimo, in utraque valva unidentato, dentibus minimis posterioribus vix perspicuis; fossula ligamenti perangusta, lineari, brevi; umbonibus parvis, vix prominentibus.*

Hab. Insula Luzon Philippinarum.

22. *SCINTILLA VITREA*, Desh. *S. testa suborbiculari, valde depressa, subæquilateralì, tenuissima, fragili, pellucida vitrea nitidissima, pallide flavidula, transversim minute striata; latere antico paulo breviorè superne declivi, postico paulo latiorè; margine superiore arcuato paululum obliquo; cardinali margine ad extre-*

mitates latiore, dentibus cardinalibus duobus inæqualibus in utraque valva, dente postico brevissimo; fossula ligamenti brevi angusta.

An *Erycina* Cuvieri, var. junior?

Unicum specimen vidi.

Hab. Insula Burias Philippinarum.

23. *SCINTILLA HYDROPHANA*, Desh. *S. testa regulariter elliptica, transversa, subæquilaterali, compressa, tenui, pellucida, hyalina, corneo-pallide flavescente, subsymmetrica, æqualiter extremitatibus obtusa, paulo hiante; latere antico paulo brevior; umbonibus minimis, acutis, oppositis, brevibus; margine cardinali fere recto, inferiori rectiusculo parallelo; cardine angusto in utraque valva bidentato; dentibus inæqualibus angustis minutissimis; dente posticali brevissimo, acuto.*

Hab. Zambalis, in insula Luzonica Philippinarum.

24. *SCINTILLA PUDICA*, Desh. *S. testa ovato-transversa, turgidula, oblonga, inæquilaterali, roseo-purpurascente intus extusque æqualiter picta, nitidissima, irregulariter transversim striata, ad apices minutissime albo puncticulata; puncticulis depressis, irregulariter sparsis; latere antico breviori, obtuso; umbonibus minimis, acutis, oppositis; margine superiore leviter convexo, inferiore recto; cardine angusto in utraque valva inæqualiter bidentato; dentibus parallelis; dente posticali brevi, truncato, subquadrangulati.*

Hab. Insula Zebuensis Philippinarum.

25. *SCINTILLA ROSEA*, Desh. *S. testa ovato-oblonga, transversa, turgidula, subæquilaterali, rosea, ad margines intusque albescente, solidula, nitidissima, transversim irregulariter striata, sub lente longitudinaliter obsolete striolata; latere antico brevior et angustior obtuso, postico latiore; umbonibus minimis, obtusis, oppositis; margine superiore tantisper convexiusculo, inferiore recto; cardine angusto, in utraque valva bidentato; dentibus minimis inæqualibus divaricatis; dente postico brevi, plano, truncato, subquadrangulati.*

Hab. Zambalis, in insula Luzonica Philippinarum.

26. *SCINTILLA RECLUZIANA*, Desh. *S. testa ovato-transversa, angusta, turgidula, inæquilaterali, tenui, fragili, pallide purpurea, hyalina, nitida, transversim irregulariter leviter striata, puncticulis minutissimis, depressis, irregulariter adspersa; latere antico breviori et angustiori, postico æqualiter obtuso; umbonibus minimis, obtusis, vix prominentibus; cardine angusto, in valvula sinistra unidentato, altero edentulo; dente posticali obsoleto.*

Hab. Australia septentrionalis.

27. *SCINTILLA PALLIDULA*, Desh. *S. testa ovato-transversa, oblonga, turgidula, æquilaterali, symmetrica, crassa, solida, albo pallide flavescente, apicibus pallide aurantiaca, nitida, irregulariter transversim substriata, irregulariter punctulis depressis minutissimis adspersa; umbonibus minimis, approximatis, acutis, oppo-*

sitis; margine superiore atque inferiore leviter convexis, parallelis, valvulis intus nitidis, pallide aurantiacis; cardine angusto, utraque valva inæqualiter bidentato; dente posticali brevissimo, truncato, subquadrangulati.

Hab. Insula Zebuensis Philippinarum.

28. *SCINTILLA FORBESII*, Desh. *S. testa ovato-transversa, solidula, æquilaterali, subsymmetrica, extremitatibus æqualiter obtusa, intus extusque pallide flavescente, nitida, hyalina, transversim obsolete striata, densissime et minutissime albo punctulata; punctis irregulariter sparsis depressis; margine superiore et inferiore rectis, parallelis; cardine crassiusculo, bidentato, altero unidentato, dentibus duobus subæqualibus acutis minimis; dente posticali brevissimo in valvula sinistra bifurcato; fossula ligamenti minima, angusta.*

Hab. Insula Borneo.

À la mémoire de Ed. Forbes, l'un des plus éminents naturalistes de la Grande Bretagne, et dont la science pleurera longtemps la perte à jamais regrettable.

29. *SCINTILLA AURANTIACA*, Desh. *S. testa ovato-transversa, turgida, subcylindracea, angusta, inæquilaterali, pallide aurantiaca, nitida, tenui, hyalina, substriata, punctulis minutissimis distantibus, albis, irregulariter sparsis, depressis, ornatis, ad marginem inferiorem ovoideis; latere antico paulo brevior et angustior; umbonibus minimis magis concoloribus; margine superiore parum obliquo, recto, inferiore leviter convexo, subparallelo; cardine angusto; dentibus duobus inæqualissimis in valvula sinistra, unico validiore conico, in altera; dente posticali brevissimo, approximato, conico.*

Hab. Australia septentrionalis.

30. *SCINTILLA ADAMSI*, Desh. *S. testa elongato-transversa, ovata, æquilaterali, inflata, tenui, pellucida, pallide luteo-flava, nitidissima, transversim obsolete striata, albo punctatissima, punctulis albis depressis, minutissimis, irregulariter sparsis; umbonibus minimis, obtusis, oppositis, vix prominentibus; margine cardinali crassiusculo, recto, inferiori recto, parum obliquo; dentibus in valvula sinistra duobus inæqualissimis, obliquis; in valvula dextra dentibus duobus subæqualibus; dente posticali punctato, brevi subquadrangulati; latere antico paulo angustior.*

Hab. Insula Boholensis Philippinarum.

À M. Arthur Adams, le savant auteur du *Genera des Mollusques Vivants*, des *Mollusques du Samarang*, &c.

31. *SCINTILLA OWENI*, Desh. *S. testa ovato-transversa, turgida, æquilaterali, subsymmetrica, tenuissima corneo-alba, hyalina vitrea, zonulis angustis opacioribus ad margines notata, nitidissima; lateribus æqualiter obtusis; umbonibus obtusis, brevissimis, oppositis, vix prominentibus; margine superiore recto, angusto, inferiori parallelo; cardine brevi, dentibus minimis duobus inæqualissimis,*

in valvula sinistra; dente posticali minimo brevi, subquadrangulari.

Hab. Insula Zebuensis Philippinarum.

En attachant à cette espèce le nom de M. Richard Owen, le plus grand zoologiste de l'empire Britannique, j'aime à rappeler ses titres à l'admiration du monde savant.

32. SCINTILLA HANLEYI, Desh. *S. testa ovato-transversa, satis lata, depressiuscula, subæquilaterali, albo-hyalina, ad apices vitrea, tenuissima, fragili, nitidissima, transversim obsolete striata, leviter undulata; latere antico paulo breviori obtuso atque posticali paulo hiantibus; margine superiore leviter arcuato, utroque latere cardinis extus dilatato, intus subcanaliculato; cardine brevissimo in valvula sinistra bidentato; dentibus subæqualibus, approximatis; dente posticali brevissimo, apice truncato.*

Hab. Insula Zebuensis Philippinarum.

Nous attachons avec plaisir à cette espèce le nom de M. Hanley, savant Conchyliologiste, auquel la Grande Bretagne doit la plus grande partie du meilleur et du plus complet des ouvrages sur les Mollusques des mers Britanniques.

33. SCINTILLA PORULOSA, Desh. *S. testa ovato-transversa, angusta, turgidula, subæquilaterali, tenui, nitida, alba subhyalina, transversim obsolete striata, punctulis minutissimis, albis, depressis, numerosissimis irregulariter sparsis adpersa, quasi porulosa; margine superiore angusto, recto, inferiori parallelo; cardine brevi inæqualiter bidentato, altero unidentato; dentibus minutis; dente posticali brevissimo, obsoleto.*

Hab. Insula Boholensis Philippinarum.

34. SCINTILLA HYALINA, Desh. *S. testa ovato-transversa, depressiuscula, subæquilaterali, tenui, pellucida, corneo-vitrea, alba, pallidissime flavidula, nitida, transversim substriata; latere antico paulo breviori, paulo obliquo, antice superque late hiantem; umbonibus parvulis, brevissimis, acutis, vix promiulis; margine superiore in medio recto, extremitatibus arcuato, inferiore convexiusculo, superiori parallelo; cardine lato, dente uncinato, acuto, in utraque valva; dente posticali brevi, trigonali, obtuso, altero bifido.*

Hab. Insulæ Torres dictæ.

35. SCINTILLA FABA, Desh. *S. testa ovato-transversa, turgida, in medio subcylindræa, inæquilaterali, candidissima, nitida, tenui, translucida, irregulariter transversim striata, punctatissima; punctulis minutissimis, depressis, irregulariter sparsis, ad marginem inferiorem evanidis; latere antico paulo breviori et angustiore; umbonibus tumidulis obtusis, brevibus oppositis; margine superiore recto paululum obliquo, inferiore angustissime hiantem, recto; cardine altero inæqualiter bidentato, altero unidentato, dentibus acutis, prominentibus; dente posticali brevissimo, apice truncato, prominente.*

Hab. —? Coll. Cuming.

36. *SCINTILLA STRANGEI*, Desh. *S. testa ovato-transversa, turgidula, æquilaterali, tenuissima, hyalina, alba, ad apices subvitrea, polita, nitidissima, superne utroque latere hiant, extremitatibus æqualiter obtusa; umbonibus minimis, brevissimis, obtusis, oppositis non prominulis; margine superiore recto, inferiore paululum convexo, parallelo; cardine angusto, dente unico, obtuso, obsoleto, in utraque valva; dente posticali brevissimo, obsoleto; ligamento minutissimo.*

Hab. Sinus Moretonensis (*Strange*).

37. *SCINTILLA ANOMALA*, Desh. *S. testa ovato-subquadrangulari, transversa, æquilaterali, symmetrica, depressa, alba, pellucida, tenui, fragili, nitida, in medio translucidior, superne sub lente minutissime puncticulata, ad marginem superiorem striis divaricatis minutis ornata; margine superiore atque inferiore rectis, parallelis; latere antico subtruncato; umbonibus minimis acutis vis prominentibus; cardine angusto extremitatibus dilatato; dentibus cardinalibus obsoletis, postico dente nullo; cicatricula musculari postica bipartita.*

Hab. Insula Samar Philippinarum.

Cette espèce est sur la limite des *Scintilla* et pourrait bien appartenir au genre *Lepton*; cependant elle en diffère par la charnière, à laquelle on ne trouve pas les dents longues et divergentes telles quelles sont représentées par MM. Forbes et Hanley dans leur ouvrage sur les Mollusques des mers Britanniques.

5. DESCRIPTIONS DE NOUVELLES ESPECES DU GENRE ERYCINA. PAR G. P. DESHAYES.

1. *ERYCINA ROTUNDA*, Desh. *E. testa orbiculato-tumida, subcordiformi, fere æquilaterali, transversim substriata, albo griseola, iridescente, nitente, tenui, translucida, latere antico paulo brevior; umbonibus minimis, parum obliquis; cardine angusto, dentibus cardinalibus minimis, inæqualibus antico compresso, prominentiori acuto; in valvula dextra dente unico uncinato, acuto, lateraliter compresso, dente postico brevi, trigonali, acuto; fossula ligamenti angusta, obliqua, profunda.*

Hab. Sinus Moretonensis (*Strange*).

2. *ERYCINA CYCLADIFORMIS*, Desh. *E. testa ovato-subrotunda, tumida, inæquilaterali, lævigata, nitida, epidermide griseo glaucescente tenui vestita, iridescente, transversim tenue et irregulariter striata; latere antico breviori obtuso; valvulis tenuibus translucens; cardine angustissimo; dentibus cardinalibus duobus in valvula sinistra, minutis, profunde basi disjunctis inæqualibus, laterali postico remoto; impressione musculari antica circulari minima, postica ovali cum impressione pallii continua.*

Erycina Cycladiformis, Desh. Trait. élém. pl. 11. fig. 6 à 9.

Hab. Le nord de la Nouvelle Hollande (*Jukes*); la Nouvelle Zélande (*Quoy*).

3. *ERYCINA DENTICULATA*, Desh. *E. testa ovato-trigonalis, donaciformi, valde inæquilaterali, antice oblique truncata, polita, nitidissima, nec striata, albo-griseo-flavescente, crassa, solida; latere antico brevi, obtuse truncato; margine superiore angulato, inferiore recto, intus tenue et regulariter denticulato; cardine incrassato, dentibus duobus in valvula sinistra inæqualibus crassis, divaricatis; interno majore; in valvula dextra dente unico pyramidalis, acuto, uncinato; dente posticali magno, brevi, crasso, triangulari, apice obtuso; ligamento brevissimo.*

Hab. Insula Borneo dicta.

4. *ERYCINA BULLULA*, Desh. *E. testa minima, suborbiculari, inflata, subæquilaterali, alba, translucida, epidermide tenuissimo griseo vestita, transversim inæqualiter striata; umbonibus prominulis, acutis; dentibus cardinalibus magnis, crassis, in valvula sinistra duobus inæqualibus; antico majore, laterali postico brevi, triangulari, intus producto; fossula brevi, angustissima; valvulis crassiusculis, intus lacteis.*

Var. β. Testa crassiore, solidula, albo-opaca, cardinalibus dentibus solidioribus.

Hab. Insulæ Philippinenses.

5. *ERYCINA PARVA*, Desh. *E. testa minima, orbiculari, subæquilaterali, turgidula, tenuissima, nitida, polita, corneo-alba, pellucida, inæqualiter substriata; latere postico paulo longiore, latiore, dilatato; cardine angusto, dentibus cardinalibus minutis, inæqualibus subdivergentibus, dente postico fere acuto; fossula brevi, angustissima; cicatriculis muscularibus æqualibus circularibus.*

Hab. Basay, in insula Luzon.

6. *ERYCINA ZEBUENSIS*, Desh. *E. testa ovato-suborbiculari, obliqua, inæquilaterali, tenui, fragili, tumidula, albo-lactea, translucida, obsolete striata, polita, nitente; umbonibus minimis, obtusis; cardine arcuato, angusto, dentibus duobus in valvula sinistra minutissimis; dente posticali remoto, elongato; fossula ligamenti angustissima, elongata.*

Hab. Sebinga in insula Zebuensi Philippinarum.

7. *ERYCINA GUTTULA*, Desh. *E. testa ovato-suborbiculari, obliqua, inæquilaterali, depressiuscula, albo-pellucida, zonulis lacteis intersecta, fragili, tenuissima, polita, nitente; latere antico brevior, angustior; umbonibus obliquis, porrectis, acutis, vix prominulis; cardine arcuato, angustissimo, subdentulo; dentibus cardinalibus minutissimis obsoletis, postico nullo; fossula ligamenti angusta.*

Hab. Insula Burias Philippinarum.

8. *ERYCINA MACRODONTA*, Desh. *E. testa rotundato-inflata, obliqua, inæquilaterali, inæqualiter striata, albo lactescente, zonulis transversis pellucidis interrupta; umbonibus oblique prominentibus, acutis; latere antico brevi, obtuso; cardine*

incrassato, dentibus cardinalibus in valvula sinistra duobus sub-æqualibus, antico uncinato, in valvula dextra dente unico, maximo, triangulari, compresso; dente posticali brevi acuto, triangulari; cicatriculis muscularibus minimis, æqualibus, circularibus.

Hab. Basay, in insula Luzon.

9. *ERYCINA GRATA*, Desh. *E. testa ovata, tumidula, parum obliqua, inæquilaterali, tenui, pellucida, alba, zonulis pellucidioribus interrupta, exillime sub lente puncticulata, puncticulis numerosissimis subreticulata; dentibus cardinalibus minimis vix perspicuis inæqualibus, acutis, dente laterali postico elongato valde remoto; fossula ligamenti lineari, elongata; margine inferiore valvularum obsolete undulato.*

Hab. Insula Samar Philippinarum.

10. *ERYCINA PAPYRACEA*, Desh. *E. testa late ovata, transversa, depressiuscula, subæquilaterali, tenuissima, fragili, albo-lactea, translucida, sub lente striis obliquis minutissimis subgranosis clathrata, textillosa; latere antico superne declivi, breviori, obtuso, postico acuto, latiore; umbonibus parum obliquis, obtusis, non prominentibus; margine cardinali arcuato, tenuissimo, unidentato, in valvula dextra bidentato, in sinistra dentibus minimis angustis æqualibus, posticali minimo, brevi, triangulari, acuto; ligamento elongato, angustissimo.*

Hab. Columbia occidentalis.

11. *ERYCINA AUSTRALIS*, Desh. *E. testa ovato-transversa, tumidula, inæquilaterali, candide lactea, translucida, tenui, fragili, nitidissima, obsolete transversim striata; latere antico brevi, obtuso, subtruncato; latere postico superne declivi, ad extremitatem obtuse angustato; margine superiore recto, inferiore æqualiter recto, parallelo; cardine angustissimo; in valvula sinistra dentibus duobus minimis inæqualissimis, in dextra dente validiore, uncinato; dente posticali elongato, triangulari.*

Hab. Australia septentrionalis.

12. *ERYCINA DUBIA*, Desh. *E. testa ovato-transversa, tumidula, oblique inæquilaterali, tenui, pellucida, fragili, alba nitida transversim tenue striata; latere antico brevi, obtuso, paulo angustiore, postico duplo majori; umbonibus brevissimis, acutis, obliquis vix prominentibus; margine cardinali lineari, oblique arcuato, inferiori recto; cardine angusto in medio late emarginato, antico bidentato, in valvula sinistra unidentata, in dextra dentibus minutissimis inæqualibus; dente posticali elongato, angusto, obsoleto.*

Hab. Insula Muerte dicta in sinu Guayaquillense.

6. NOTES ON THE NESTS AND EGGS OF THE BIRDS OF WESTERN INDIA.—PART XI. BY LIEUT. BURGESS.

Family COLYMBIDÆ.

Genus PODICEPS.

PODICEPS PHILIPPENSIS.

I believe the egg sent with this paper, to be that of the Grebe. It was taken from the nest with several others in the month of August. The nests were composed of rotten reeds and grass, fastened between tall reeds*; each nest contained about eight eggs, 1 inch and nearly $\frac{1}{10}$ ths in length, by 1 inch in width. Some of the eggs were nearly white, others much discoloured.

Family PELECANIDÆ.

Subfamily LARIDÆ.

Genus STERNA.

Subgenus STERNA.

STERNA MELANOGASTER (Temm.). BLACK-BELLIED TERN.

I found this Tern common on the river Bheena, and was fortunate enough to obtain an egg. On a second occasion, when walking on a sandbank in the midst of the river where I obtained the first egg, I was beset by a pair of these Terns, and on looking about on the ground, found two eggs deposited in a slight hollow scraped in the moist sand, not far from the brink of the water. These birds, when flying overhead, utter a cry very like the chirp of a Sparrow. One could easily distinguish the different kinds of Terns by their varied notes.

The Black-bellied Tern breeds during the months of March and April, laying two eggs. The egg measures 1 inch and rather more than $\frac{1}{10}$ ths in length, by 1 inch in width. It is of a rich stone-colour, spotted chiefly round the centre, and more sparingly over the large end with grey and light brown spots.

Subgenus RHYNCHOPS.

RHYNCHOPS NIGRA.

This large species of Tern I found most abundant on the river Bheena, and had ample opportunities of studying its habits. On a large sandbank in that river I found that a large colony had established themselves, and found young birds able to fly, nestlings and

* The eggs were carefully covered over, and the heat arising from the nest was most perceptible: the eggs appear to be hatched by the heat arising from the decaying vegetable matter.

eggs. The appearance of these birds is attractive, their long orange razor-like beak, long wings, and curious skimming flight, ever and anon dipping their lower mandible under water, their odd shuffling gait when walking on the sand, as if they scarcely knew what to do with their beak, and apparent difficulty in arranging their long swift-like wings, their curious chattering notes when they assemble on some spit of sand at the water's edge,—all these points attract any one fond of natural history.

I first noticed these birds on a mud-bank in the river in the month of January. On visiting the same place in April, I found them on a sand-bank higher up, and suspecting this to be their breeding-time, was conveyed over the water to the bank. On reaching it and narrowly inspecting the ground, I found the remains of broken eggshells; after a further search, I was rewarded by finding four or five nests, also the nest of a Little Ringed Plover and Black-bellied Tern. The Rhynchops lays four eggs in a hole scraped in the damp sand and gravel. Those which I found were mostly near the water's edge. In some nests I found young ones, and procured one young bird that was able to fly very fairly. Any one at all accustomed to the habits of birds might have told that they were nesting by their restlessness, and the vicious way in which they attacked all intruders. I saw them buffet a large Plover that pitched on the bank, and boldly attack those insatiable pilferers of nests, the Crows. The very young birds, when first hatched, are covered with a whitey-brown down, spotted with dark spots. The curious square end of the beak is very marked. The legs and feet of a dirty greyish-brown. The eggs are rather more than $1\frac{1}{2}$ inch in length, by 1 inch and rather more than $\frac{1}{16}$ th in width, of a pale stone colour, spotted and blotched with grey and two shades of brown.

I subjoin the description of a young bird that was able to fly, probably about six weeks or two months old. The beak (after the skin was dried) was of a dull brown tinged with orange; the under mandible sharp, as in the old bird, but scarcely longer than the upper. Feathers on the cheeks pale fawn colour, with a few dusky spots, those on the forehead much the same, but the dusky spots more visible; on the top of the head behind the eye, back of the neck, the feathers are dull black, with pale ferruginous edges; lower part of the back of the neck whitish, with a broad brown bar, and tipped with pale ferruginous; upper tail-coverts, some dusky black, with pale ferruginous edges, some ferruginous mottled with white; tail-feathers, lower portion white, upper portion dusky, with a marked border of pale ferruginous; primaries nearly black, with pale tips; smaller quill-feathers, lower portion dusky, upper nearly white; secondaries much the same, the white being much clearer; greater coverts dusky, with whitish tips; tertials dusky, with pale ferruginous edges; the lesser coverts the same; chin, throat, breast and belly, under tail-coverts white; sides of the neck white, with a few dusky spots; legs and feet dirty orange-brown.

7. ON THE RELATIVE WEIGHT OF THE BODY AND OF THE VISCERA
OF THE ELEPHANT. BY EDWARDS CRISP, M.D.

In July 1854, I made a communication to the Society on the weight and form of the viscera of the Elephant, and I exhibited drawings of the thoracic and abdominal viscera of the size of life; I made some additional observations on the same subject at the Physiological Society of London, an abstract of which is published in the medical journals (the 'Lancet' and 'Medical Gazette').

The animal I had then dissected was a male Elephant, which died on Marsden Moor, in Yorkshire, in the menagerie of Mr. Wombwell. The recent death of the female Elephant in the Society's collection enables me to extend my observations, and I purpose now only giving the comparative weight of the bodies and of the viscera of these animals, with a few additional remarks.

The age of the male was twenty-two years, and he measured 10 feet from the highest part of his back. The animal, prepared by Mr. Bartlett, is now in the Crystal Palace. The cause of death, inflamed lungs. The weight stated at the Railway was 3 tons when the body was eviscerated, but, judging from the weight of the last specimen, it could not *altogether* have exceeded 3 tons, and assuming this to have been the weight, the relative proportion of the viscera is about as follows:—

Brain, 12 lbs.	$\frac{1}{115}$.	
Lungs, 47 lbs. 8 oz.	$\frac{1}{12}$.	
Heart, 17 lbs. 9 oz.	$\frac{1}{33}$.	
Liver, 33 lbs. 12 oz.	$\frac{1}{65}$.	
Spleen, 6 lbs. 9 oz.	$\frac{1}{1034}$.	
Right kidney, 7 lbs. 2 oz.	$\frac{1}{813}$.	} Supra-renal capsules included.
Left kidney, 5 lbs. 10 oz.	$\frac{1}{1164}$.	
Alimentary canal, 106 feet.		

The next mentioned animal, a female, about thirty years of age, had been eighteen years at the Society's Gardens, and was in good health and condition up to July the 14th, 1855, when, during the thunder-storm on that day (Saturday), she exhibited signs of fright, diarrhoea came on, she shook violently, and died at five o'clock on Monday morning. From the appearance of the blood, microscopical and otherwise, I have reason to believe that her death was occasioned by fright or by electrical influence.

Mr. Bartlett had the body weighed, and the subjoined is the result:—

Skin	683 lbs.
Flesh and bones	3642 „
Supposed loss	200 „
	<hr/>
	4525 „

The viscera were weighed with steelyards, and adding the weight of

the viscera to the above, the total amount is about 5225 lbs. The under-mentioned are the proportions:—

Heart, 23 lbs.	$\frac{1}{17}$.
Lungs, very much congested, 107 lbs.	$\frac{1}{4}$.
Liver, 50 lbs.	$\frac{1}{14}$.
Spleen, 9 lbs.	$\frac{1}{16}$.
Kidney, 8 lbs.	$\frac{1}{15}$.
Alimentary Canal—	
Esophagus about	6 feet.
Stomach	3 „
Small intestines	74 „
Cæcum	5 „
Other large intestines	35 „
	<hr/>
	123 „

The large intestines, from their great weight, were not extended like the small, and I measured them with a foot rule, so that the *exact* length could not be given, but I believe that the error (if any) is very slight. The large intestines were of great size, and would probably have held 150 gallons of water.

In estimating the comparative weight of the viscera of the above animals, it must be borne in mind that the male was very thin, and the female in excellent condition; and this leads me to speak of a curious circumstance respecting the presence of fat in the body of the Elephant. In the male not a particle of fat was present. Mr. Bartlett, who has assisted at the dissection of four Elephants besides the last-named, could find no fat in their bodies, and all writers that I know of have made the same statement. The body of this animal, however, contained a large quantity (probably 40 or 50 lbs. in all) of fat. This was not deposited in solid hard masses, as in the carnivora, ruminantia, and other animals, but it was dispersed about the viscera, stomach, intestines, heart and mesentery in thinnish layers, and a great deal of it, when the body was warm, was in a fluid state; but on cooling it assumed a tallowy condition, and evidently contained a large quantity of stearine.

Another circumstance I may allude to, respecting the assertion of many writers, that the body of the Elephant decomposes very rapidly; but this, as I stated in my first paper, depends much upon the state of the atmosphere. The body of this animal was in a rapid state of decomposition; but the viscera of the male, which were buried on Marsden Moor, and which I had exhumed after the animal had been dead about a week, were scarcely in the first stage of decomposition, but the weather was excessively cold.

The kidneys of the female were lobulated, those of the male not lobed.

As stated in my first communication, I examined in the space of a fortnight the teeth of ten living elephants in this country, and this animal was among the number. I copy the description given in February 1854:—"One molar on each side of the upper jaw, one on the left lower jaw, and two on the right side. The anterior one

being narrow, of a dark colour, loose, and evidently on the point of being shed."

The keeper found this tooth some months after. At the time of death there were four molars; the upper two having eleven plates each, the lower, twelve. No rudimentary teeth were perceptible externally, but small apertures existed for their advent.

8. ON SOME POINTS RELATING TO THE ANATOMY OF THE TASMANIAN WOLF (*THYLACINUS*) AND OF THE CAPE HUNTING DOG (*LYCAON PICTUS*). BY EDWARDS CRISP, M.D.

Before I proceed to the immediate object of my communication, I may be excused, I trust, for alluding to a mode of investigation that I have followed in all my dissections, viz. that of taking accurate weights and measures of the body of the animal and of the viscera, with drawings the size of life of the organs examined.

By this method, combined with the use of the microscope, I believe hereafter that much light will be thrown upon many physiological subjects which are at present but imperfectly understood. It is, however, only by comparison on a large scale that any important benefit is likely to result.

THYLACINUS CYNOCEPHALUS.

This animal (a male) died at the Society's Gardens, where it had been for several years. I believe it is the only one that has been dissected in this country. It weighed 33 lbs., and measured from nose to root of tail 2 feet 9½ inches. The tail, 15 inches. The penis curved backwards. The cause of its death was unapparent. It was excessively fat; the fat on its abdomen and other parts weighing probably four or five pounds. The heart, long and pointed; weight, 4 oz. 60 grs. The trachea of moderate size; the connecting membrane at the posterior part very thick. The lungs trilobed; weight, 4 oz. 304 grs. The liver composed of five main lobes; weight, 14 oz. The spleen long, thin and narrow, with a lateral tongue-like process (as in nearly all of the *Marsupialia*) ¼ from the upper end. Length of spleen, 10½ inches; its average breadth about an inch; it was seated along the left side of the stomach, imbedded in fat. The kidney of a rounded form; weight, 1 oz. 167 grs. The alimentary canal measured only 6 feet 6 inches. The stomach of moderate size; its coats very thick, and capable of great distension. The rugæ of the lining membrane large and prominent; the pyloric valve strong and muscular; the length of empty stomach 8 inches; the duodenum at its commencement studded with numerous bead-like processes, which emerged into a portion of mucous membrane thickly studded with villi about 3 lines in length, as represented in fig. 1. These were continued for nearly four feet; they resemble much the ramens of the sheep or rein-deer. In the small intestines of the Rhinoceros, fig. 2, the villi are about 6 or 8 lines in length, but far less numerous.

The cæcum absent. The large intestine measured 12 inches; the coats thick and the lining membrane plicated longitudinally. The relative weight of the viscera as compared with that of the body is about as follows:—Liver, $\frac{1}{3}$; spleen, $\frac{1}{15}$; kidney, $\frac{1}{15}$; heart, $\frac{1}{17}$; lungs, $\frac{1}{15}$; the blood-corpuscles about $\frac{1}{2500}$ of an inch in diameter.

Fig. 1.

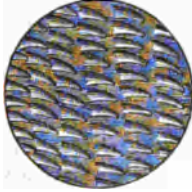
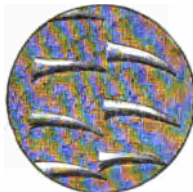


Fig. 2.



I have examined the two skeletons of the *Thylacinus* at the Museum of the College of Surgeons, a description of which is given by Professor Owen in the new Osteological Catalogue (p. 347). The teeth, 46 in number; incisors, 8 above and 6 below; canines, 4; molars, 28, 14 in each jaw = 46. Vertebrae: cervical, 7; dorsal, 13; lumbar, 5; sacral, 2; caudal, 23; ribs, 13.

The time does not allow me to dwell on many points of great interest respecting the anatomy of this animal, but a comparison of the structure of the *Thylacinus* with the Dog I am about to describe will not be unprofitable.

CAPE HUNTING DOG (*LYCAON PICTUS*. S. Africa).

This animal died at the Society's Gardens, where it remained for some months previous to its death, a few days before which period it had several convulsive fits. I could not examine the brain; but Mr. Ward, who stuffed the animal, told me that a large quantity of serum escaped from the cranium, so that probably death was occasioned by inflammation of the brain and effusion of fluid.

In Cuvier's 'Animal Kingdom,' 1849, by Carpenter, p. 91, is the following note:—"This remarkable species is dog-like, but certainly not a *Canis*; its form and colouring (and, there is reason to suspect, its internal conformation) are rather those of a hyæna, and it is known to copulate in the manner of those animals, and not in the peculiar manner of the dogs and foxes. Even its dentition is the same as that elsewhere found (with one other exception, *Proteles*) throughout the group to which we conceive the hyænas to belong, the dental system of which latter appears to be modified in accordance with their much increased and prodigious strength of the jaw."

This dog weighed about 50 lbs.; it measured 3 feet 1 inch from nose to root of tail; tail, 13 inches; height to the back behind neck, 2 feet 3 inches; fore-leg, $16\frac{1}{2}$ inches; ribs, 13. Teeth: incisors, 6 in each jaw, 12; canines, 4; molars, 10 above and 12 below, = 38. The age of the animal about $2\frac{1}{2}$ years. Heart of a rounded form; weight 8 oz.; the parietes of the left ventricle 10 lines in thickness, of

the right 3 lines ; the aorta of large calibre, and its coats thick. Lungs, the right four-lobed, the left three- ; weight 26 oz. Trachea very large. Liver seven-lobed ; weight 21 oz. Bile of a dark yellow colour. Gall-bladder of moderate size. Spleen about 500 grs. in weight ; long, lax, thin and narrow, as in all the *Carnaria*. It was in the usual situation in this order of animals, viz. on the left of the stomach, to which it was attached by a wide mesenteric fold ; the splenic artery and vein long ; no valves in the latter. Pancreas small and elongated. Kidney oblong, less concave on its inner side than usual. The stomach of moderate size, and shaped like that of the dog ; length 12 inches ; this organ with the œsophagus measured 12 feet 6 inches ; the cæcum, which was in $2\frac{1}{2}$ spiral folds like that of the dog, when unfolded was 5 inches in length ; the colon and rectum 1 foot 10 inches ; total, 14 feet 9 inches. The cæcal valve strong and distinct. The alimentary canal was too much decomposed to allow of my making a microscopical examination of it, but its structure appeared to resemble that of the Dog.

The ribs of the Hyæna are 15 ; those of the Lycaon 13, as in the Dog, Wolf and Fox. The teeth of the Hyæna, judging from two skulls in the Museum of the College of Surgeons, are, 4 incisors above, 6 below, 10 molars above, 12 below, canines 4, =36. In the skull of the Striped Hyæna 10 molars in each jaw (one specimen), and in some fossil jaws of this animal the number of molars is less than above quoted ; but much, of course, will depend upon the age of the animal. In the Pointer, Blood-hound, Dingo, and other dogs, I found 12 molars above and 14 below, the canines being 4 and the incisors 12. The same with the Wolf and Fox.

The only record I can find of the dissection of a Hyæna is one furnished me by Professor Quekett, and in this animal (30 years old) the alimentary canal measured 39 feet $5\frac{1}{2}$ inches. The account is copied from Professor Quekett's notes. I was at first inclined to suppose that the copyist had made some mistake, the length mentioned being very great for a carnivorous animal. Professor Quekett suggested "that the large quantity of phosphate of lime taken by the hyæna might explain the anomaly."

On referring, however, to the notes of my dissections of four dogs, in which I carefully measured the alimentary canal of all, the above statement does not appear to be so improbable :—

Small Terrier, alimentary canal 7 feet 4 inches.

Small Terrier (young), 7 feet.

Blood-hound, 21 feet ; including large intestines, 2 feet 2 inches.

Large Mastiff (old), weighing 104 lbs., 31 feet ; including large intestines, 3 feet.

Common Fox, 10 feet 6 inches.

Young Indian Wolf (four months old), 6 feet 1 inch.

So that, looking to the ribs, teeth, cæcum, length of alimentary canal, and general form of the viscera, this animal must be classed with the Dogs, and not with the Hyænas.

Additional Remarks on the Lycaon pictus.

After the death of the dog, the bitch which was with him became restless, howled frequently, refused her food, and died July 13th, ten days after.

I examined the body a few hours after death. She was about the same size as the dog, and of the same age. She had probably lost 10 or 15 lbs. in weight. The body weighed $31\frac{1}{2}$ lbs., and the subjoined is the relative weight of the viscera, fractions being omitted:—

Heart, 7 oz. $\frac{1}{3}$.

Lungs, 24 oz. $\frac{1}{4}$.

Liver, 18 oz. $\frac{1}{5}$.

Spleen, 790 grs. $\frac{1}{15}$.

Pancreas, 370 grs. $\frac{1}{15}$.

Kidney, 1080 grs. $\frac{1}{15}$.

Alimentary canal, 13 feet 6 inches.

The uterus resembled that of the bitch (*C. familiaris*); the vagina 9 inches in length, the cornua 6 inches each.

But one of the most interesting results of this dissection was the examination of the blood-corpuscles; these were larger than in any carnivorous animal that I have dissected; they measured, the greater part of those examined, about the 3000th of an inch in diameter, being larger than those of Man.

I may add, that I could not discover any morbid lesion in this animal, and that I believe her death was occasioned by the loss of her companion.

Dr. Crisp exhibited the injected heart and large arteries of a Viper (*V. berus*), for the purpose of showing the mode of communication between the aortæ, by way of contrast with the Saurians and Chelonians. The organs of generation (male) were likewise shown, the large comparative size of the testicles, and the great length of the seminal ducts being especially noticed.

Dr. Crisp had formed a table of the length and weight of the body, as well as of the viscera of seven of these reptiles, which he had dissected. The length varied from 19 to 23 inches; the weight from 1 oz. 182 grains to 3 ozs., the females being the largest. In the stomach of one of these reptiles a half-grown frog was found; in the remaining six this viscus was empty.

The proportion the various viscera of this reptile bear to the body is about as follows:—Liver, 30; pancreas, 2140; spleen, 2146; kidney, 59; heart, 178; brain, 1620.

Dr. Crisp stated that he had inserted the poison of the Viper into the bodies of Toads, Frogs, Snakes, Lizards, and several insects, without producing apparently any deleterious effects, but the experiments required repetition. Dr. Crisp believed that he had positive evidence to show that the young of the Viper were sometimes received into the throat of the mother; and the assertion of Pro-

fessor Henslow and others that it was an anatomical impossibility, was entirely disproved by the large size of the cesophagus before the Society.

November 13, 1855.

Dr. Gray, F.R.S., in the Chair.

1. ON A NEW GENUS AND SPECIES OF TROCHILIDÆ FROM
ECUADOR. BY JOHN GOULD, F.R.S. ETC.

The remarkably fine species of Humming Bird which I am about to describe, I have lately received from Ecuador. This new bird is remarkable for its large size, deeply forked tail and the harmonious hues of its plumage, which, although less glittering and metallic than in many other species, is nevertheless strikingly beautiful. I consider this bird to be new to science, both generically and specifically, and as the name of *Victoria regia* has been given to one of the finest flowers of the same part of South America, I am desirous of dedicating this new Humming Bird to the Empress of the French, and I accordingly propose to name it *Eugenia imperatrix*. Its native habitat is the vast Andean forests in the neighbourhood of Quito in Ecuador, where it procures its insect food from the bell-shaped flowers of the *Daturæ*.

Genus EUGENIA.

Gen. Char. Bill rather lengthened, straight and strong; wings long and pointed; tail lengthened and very much forked, the feathers narrow and rigid; tarsi clothed with feathers nearly to the toes; feet small.

EUGENIA IMPERATRIX.

Male. Face and fore part of the neck brilliant grass-green; crown of the head, back, neck, chest and upper part of the flanks very deep-green; on the centre of the throat a gorget of reddish-violet; abdomen and under tail-coverts shining, greenish-yellow; wings purplish brown; tail deeply forked, the feathers black, narrow and rigid; some tufts of white downy feathers across the lower part of the abdomen; thighs brown in front, white behind.

Total length $6\frac{1}{2}$ inches; bill $1\frac{1}{2}$; wing $3\frac{1}{2}$; tail 3.

Female. Upper surface green; throat, chest and abdomen grayish-white spangled with green, the spangles being very minute on the throat and gradually increasing in size downward to the flanks; tail blackish-brown; tarsi white.

Total length $5\frac{1}{2}$ inches; bill $1\frac{1}{2}$; wing $2\frac{3}{4}$; tail $2\frac{3}{4}$.

Hab. Ecuador.

2. CHARACTERS OF SOME APPARENTLY NEW SPECIES OF BUCCONIDÆ, ACCOMPANIED BY A GEOGRAPHICAL TABLE OF THE FAMILY. By PHILIP LUTLEY SCLATER, M.A., F.L.S.

(Aves, Pl. CV. CVI.)

1. BUCCO HYPERRHYNCHUS. (Pl. CV.)

Tamatia hyperrhynchus, Bp. MS. et Consp. Vol. Zygodact. p. 13.

B. supra fulgenti-niger; fronte lata et superciliis anticis albis: subtus albus, nigro late torquatus; lateribus nigro radiatis: rostro maximo.

Long. tota 10·5; alæ 4·5; caudæ 3·5; rostri a rictu 2·1.

Hab. In regionibus fl. Amazonum superioris (*Hawswell*). Mus. Paris. et P. L. S.

When I drew up the characters of *Bucco macrorhynchus*, as given in the 'Annals of Nat. Hist.' for May last (p. 357), I had not in my possession specimens of the true *macrorhynchus* from Cayenne, and consequently confounded with it the present bird. But the much larger size of the bill and whole body, the greater extension of the white colour on the front, the narrower black band and the total absence of any fawn-coloured tinge on the belly and vent are quite sufficient to distinguish this *Bucco* from its Cayenne representative.

I have lately ascertained, through the kindness of Prince Bonaparte, that this is the species included under the name *Tamatia hyperrhynchus* in his *Conspectus Volucrum Zygodactylorum*, published in the 'Ateneo Italiano' of May last, and I have therefore adopted his specific designation. But no descriptions have yet appeared of the many new species of which the names only are inserted in that and other similar recent publications of the Prince.

The type specimens of the present bird are in the French National collection.

2. BUCCO DYSONI.

Tamatia gigas, Bp. Consp. Vol. Zygodact. p. 13?

Bucco dysoni, G. R. Gray in Mus. Brit.

B. supra fulgenti-niger; fronte usque ad oculos et collari postico albis: subtus albus; vitta pectorali lata nigra; lateribus nigro variis; rostro pedibusque nigris.

Long. tota 9·7; alæ 4·5; caudæ 3·4; rostri a rictu 1·8.

Hab. In America Centrali, Honduras (*Dyson*). Mus. Brit.

Obs. Species a *Buccone macrorhyncho* fronte latius albo, rostro majore, et ventre pure albo, a *Buccone hyperrhyncho* rostro minore et fronte minus albo diversa, et inter has duas media locanda.

A single specimen of this bird in the British Museum was procured by Mr. Dyson in Honduras. In my Synopsis of this family I have confounded it with its near affines, from which I now think, as might have been expected from the locality, it will bear separation. It is very probable that Prince Bonaparte's name, *gigas* (which was applied to a bird brought by Delattre from Nicaragua), was intended

for this same species, but as the type has disappeared, and no specific characters have been published for the name, it is difficult to be certain on that point.

3. BUCCO PULMENTUM. (Pl. CVI.)

Tamatia (*Nyctactes*) *pulmentum*, Bp. et Verr. MS.

B. supra fusco-brunneus; fronte et superciliis rufescentibus; torque angusto nuchali inconspicuo albido; dorsi medii alarum uropygiique plumis partim fulvo terminatis: subtus albus; gutture inferiore pallide rufescente; plaga utrinque gutturali magna cum maculis crebris pectus totum et ventrem (præcipue ad latera) occupantibus atris: rostro nigro.

Long. tota 5·0; alæ 3·1; caudæ 2·5.

Hab. in Peruvia Orientali et regionibus fl. Amazonum superioris: Pebas (*Cast. et Dev.*): Chamicurros (*Hawxwell*). Mus. Paris., Joh. Gould et P.L.S.

Obs. Sp. *Bucconi tamatiæ* affinisissima, sed gula pallidiore et maculis ventris majoribus et intensioribus differt.

This appears to be a western representative of the *B. tamatia* of Cayenne, from which, however, I think it may be fairly separated. MM. Verreaux of Paris have lately received a considerable number of specimens of it from the Upper Amazon. They all present the same distinctive characters as are above noticed.

4. MONASA PERUANA.

Monasa peruana, Bp. et Verr. MS.

M. plumbescenti-nigra, capite et gutture intensioribus; fronte et menti summa parte albis: rostro ruberrimo.

Long. tota 11·0; alæ 5·0; caudæ 4·5.

Hab. In Peruvia Orientali in regionibus fl. Amazonum superioris: Chamicurros (*Hawxwell*). Mus. Joh. Gould et P.L.S.

Obs. Simillima *M. personatæ* sed rostro clarius rubro, mento ad ipsam apicem solum albo haud nisi dubie disjungenda.

My specimen of this bird was obtained from the MM. Verreaux, and carries the MS. name above quoted, which I have thought it as well to adopt. The characters which separate it from its well-known Brazilian representative are certainly very slight, but appear to be constant in at least a dozen examples I have examined from the same locality.

5. BUCCO PICATUS.

B. supra niger; plaga in summis scapularibus utrinque magna et maculis in pileo rotundis cum loris albis: subtus albus; vitta lata pectorali nigra: cauda nigra, rectricibus tribus utrinque extimis in medio et harum omnium apicibus albo maculatis: rostro pedibusque nigris.

Long. tota 6·7; alæ 3·2; caudæ 2·3.

Hab. In reg. fl. Amazonum superioris; Chamicurros (*Hawxwell*). Mus. Joh. Gould.

Obs. Species *Bucconi tecto* forsan nimium affinis, et ob crassitiem majorem, torquem pectoris latiore et caudam minus albo maculatam non sine dubio constituenda.

Mr. Gould's collection contains two examples of this bird, which he has entrusted to me for comparison with its Cayenne representative. It is not, however, without hesitation that I have determined to separate them from it. Besides their larger size and broader breast-band, the white medial square spot extends in the present species only through the three lateral rectrices, with a slight trace of it in the fourth.

In the Cayenne bird the outer five pairs are all strongly marked thus. The whole plumage of the bird is also generally more intensely black.

6. MALACOPTILA NIGRIFUSCA.

Malacoptila fusca, ex Bogota, Sclater, P. Z. S. 1855, p. 136.

M. nigricanti-brunnea, plumarum scapis pallide fulvis; loris et plumis mystacalibus cum plaga triangulari super-pectoralis albis: ventre medio crissoque fere unicoloribus, albicantioribus; rostri basi læte aurantio, apice nigra; pedibus nigricanti-brunneis.

Long. tota 6·5; alæ 3·5; caudæ 2·5.

Hab. In Nova Granada, Santa Fé de Bogota. Mus. Brit. et Joh. Gould.

Obs. Sp. *Malacoptila fusca* affinissima sed statura minore et coloribus nigricantioribus: rostri basi lætius aurantio.

This New Grenadian bird, which in my Synopsis of this family and List of Bogota birds I united with the true *fusca* of Cayenne, certainly presents considerable claims for specific distinction. The body is generally smaller, the bill in particular is shorter and not so strong, and at the base is of a deep orange colour instead of pale yellow, the black not extending so far towards the base of the upper mandibles; also, the markings on the head, throat and breast are much blacker, and I have therefore named the bird *nigrifusca*. There are specimens of it in the British Museum and in Mr. Gould's collection.

The East Peruvian or High-Amazon examples on the other hand (which are held distinct by some naturalists under Du Bus' title *inornata*) resemble the Cayenne bird much more nearly. After remarking that the white lore-spot is nearly obsolete, and the skins are rather finer and larger, it is in truth difficult (at least with my present examples) to see further differences, and I therefore regard *M. inornata* as a very doubtful species.

Rio Napo specimens are still more like the true *fusca*.

[illegible]

3. ON SOME NEW SPECIES OF FRESHWATER TORTOISES FROM NORTH AMERICA, CEYLON AND AUSTRALIA, IN THE COLLECTION OF THE BRITISH MUSEUM. BY DR. J. E. GRAY, F.R.S., F.R.G.S. ETC.

Fam. I. EMYDIDÆ.

The freshwater Tortoises which have been referred to the genus *EMYS*, as it is at present constituted, may be divided into two very distinct genera; and this is the more advisable as it is extremely difficult to distinguish the American species of which it is composed, and the separation of any of them by organic characters must facilitate the process. The genera may be thus named and defined:—

1. *EMYS*.

The lower jaw rounded beneath, and covered with, the hinder part of the horny beak; the toes strong, covered with broad band-like scales.

This genus includes *E. ornata*, *E. scripta*, *E. Holbrookii*, and many other species, both Asiatic and American.

2. *PSEUDEMYS*.

The lower jaw flattened beneath and covered with a soft skin. The toes weak, slender, covered with small scales above, and very broadly webbed.

1. *Pseudemys concinna*.

2. *P. serrata*.

The genera *Batagur* and *Malaclemys* have nearly similar feet, and they appear, like *Pseudemys*, to be the most aquatic animals of the family.

The species which have hitherto been referred to the genus *CISTUDO* differ considerably in their habits, some being nearly terrestrial and others almost exclusively aquatic. The examination of the animal shows that there are good external characters by which they may be divided into natural groups agreeing with their habits and their geographic distribution.

I. The more terrestrial have the front of their legs covered with thick, imbricate, triangular scales, the toes only slightly webbed, and the sternum broad, hiding the legs when withdrawn, as—

1. *CISTUDO*.

The head rhombic, the forehead flat, and eyes lateral: confined to N. America; as

C. Carolinensis, with four, and *C. Mexicana*, with only three toes on the hind feet.

2. *LUTREMYS*.

The head oblong, depressed, with the eyes on the upper part of the cheek. Found in Europe, as *L. Europæa*.

II. The more aquatic kinds have the front of the legs covered with small scales and some broad, transverse, lunate plates; the toes webbed. They are confined to Asia; as

3. CUORA.

The head rhombic, the eyes lateral, the sternal lobes broad, hiding the legs when contracted, as *C. Amboinensis* and *C. trifasciata*.

4. CYCLEMYS.

The head depressed, eyes subsuperior, the sternal lobes rather narrow, not hiding the legs when contracted, as *C. dentata* and *C. platynota*. The latter species was referred to the genus *Testudo* by F. Müller, and when I first described it I considered it as an *Emys*, but the examination of a series of specimens of different ages shows that it is a species of Box Tortoise nearly allied to *C. dentata*.

It has been hitherto believed that there was only a single species of the genus KINOSTERNON, as now restricted, found in the United States; and all the adult specimens I have received from that country are, I must own, exceedingly alike, so much so that I cannot undertake to say that we have adult specimens of more than a single species. On examining the young specimens of this genus from the United States, in the Museum Collection, it is evident that there are at least three most distinct species found in that country, which probably in their eroded and discoloured adult state are so alike as to be mistaken for one another.

They may be thus described:—

1. KINOSTERNON PENNSYLVANICUM.

Head brown-dotted; temples with two parallel distant streaks of white spots, from the upper and lower edge of the orbit, and a third streak across the lower jaw; neck white-dotted; back deep brown; lower side of marginal shields, the axillary and inguinal plates and each of the sternal plates with a large yellow spot; sternum broad, rounded before and behind.

Hab. North America, Florida, *E. Doubleday, Esq.*

2. KINOSTERNON HIPPOCREPIS.

Head brown, with a broad white streak on each side, from the end of nose over the eyebrows to the sides of the nape; back pale and sternum brown; dorsal shield with a single apical and some scattered black spots; under side of each marginal and sternal plate rather paler in the middle; sternum rather broad, rounded in front and slightly truncated behind.

K. Pennsylvanicum, Holbrook, N. Amer. Herp. t. 21.

Hab. North America, New Orleans, *E. Doubleday, Esq.*

3. KINOSTERNON PUNCTATUM.

Head brown, minutely white-dotted, without any streaks; the back brown, discal shield with a very distinct apical, and some scattered black spots; margin with a very narrow white line; under side whitish,

with minute scattered black dots and line; sternum narrow, contracted at each end, and with straight sides behind, rather truncated in front and more distinctly and broadly so behind.

Hab. North America.

There are several specimens of the first species of different ages, from various parts of the States, in the British Museum; I have therefore retained for it the more general name; and two young specimens and a half-grown one of the second species, and only a single young specimen of the third species; the latter is so distinct, by the narrow form of its sternum, from the other two, that it might be referred to the genus *Aromochelys* if the pectoral plates were not triangular; it may be considered as the species passing towards that genus, and I should think that the adult animal must differ considerably from the common form of *K. Pennsylvanicum*.

AROMOCHELYS.

The Musk Tortoise, or, as it is more commonly called, the Stinkpot of North America, is easily distinguished from the other *Kinosterna* by the narrowness of the sternum and the humeral plates being square, like the pectoral one, instead of triangular, as they are in *K. scorpoides* and *K. Pennsylvanicum*. For this reason I have proposed to divide them into a distinct group under the name of *Aromochelys*.

I am the more inclined to do so, as there are two most distinct species in the British Museum Collection, which have either been confounded together by the American naturalists, or have been most unaccountably overlooked. They may be thus defined:—

1. AROMOCHELYS ODORATA.

Head moderate, with two streaks from the nose, one above and the other under the eyes, to the side of the neck; the back oblong-convex, the vertebral line rather flattened; the gular plate small, triangular, the humeral plate rather oblique, shield brown, purple-brown spotted.

Holbrook, N. Amer. Herpet. t. 22.

Hab. United States and Louisiana.

2. AROMOCHELYS CARINATA.

We have four specimens of this species in the Museum Collection. Cat. Tortoises B.M. t. 20 a.

Head very large, black-dotted, without any lateral streaks; back oblong, very high, the vertebral line high and acutely keeled the whole length, shields grey-brown, spotted and lined with purple-brown; the gular plate very small, linear, transverse marginal, the humeral plate square, transverse, parallel to the pectoral plates.

Hab. North America, Louisiana.

There are two species of North American Tortoise which are referred to the genus *CHELYDRA*, which are so differently organized that they are evidently the types of two very distinct genera, which may be thus characterized:—

1. CHELYDRA.

Head moderate, rather depressed, covered with a soft skin, chin bearded, neck granular; back with two slight keels; marginal plates in a single series.

Chelydra serpentina.

2. MACROCHELYS.

Head large, angular, contracted in front, covered with symmetrical horny plates, neck with several series of spinose warts; back with three sharp continued tubercular keels; the lateral marginal plates in a double series.

M. Temminckii.

Fam. II. CHELYDIDÆ.

When Australia was first visited by Sir Joseph Banks, he brought home with him from New Holland a freshwater Tortoise, which Dr. Shaw described under the name of *Testudo longicollis*. This has been made the type of the genus CHELODINA. Recent travellers in Australia have shown that the genus is distributed over the country; each part appears to have a species peculiar to itself. In Capt., now Sir George Grey's Travels, I described and figured a species from Western Australia under the name of *Chelodina oblonga*. In a collection which we have lately received from Haslar Hospital, there are two very large specimens of the genus sent from Swan River by the late Mr. Collie, which, though similar in several respects to *Chelodina oblonga*, may be considered as a distinct species, which I shall proceed to shortly characterize.

The species of the genus hitherto described have the thorax covered with very thin smooth shields, so transparent that a peculiar black reticulated appearance, which exists between the shields and the bones of the thorax, can be distinctly seen through them. This character is common to *C. longicollis* of New Holland, *C. oblonga*, and Mr. Collie's species from Swan River, which I propose to call, in honour of my late friend and excellent collector—

1. CHELODINA COLLIEI.

The shield oblong, elongate, contracted and revolute on the sides; under side uniform pale yellow.

Hab. Swan River, *Alexander Collie, Esq.*

This species agrees with *C. oblonga* in the uniform colour of the back and sternum, which is only varied by the dark lines of the netted appearance before referred to; but it is easily known from that species by its larger size, the much narrower shape, and the lateral margin becoming strongly revolute, and the edge over the hinder limb raised up and rather expanded.

The British Museum have lately received, with some other specimens, from the Australian continent—but unfortunately the special habitat was not indicated—the shell of a Tortoise which has all the characters of the genus as at present defined, except that, instead of

the shields on the thorax being thin, submembranous and semitransparent, they are thick, horny and concentrically grooved like the shields of many other genera. It is not accompanied by the head or limbs of the animal, so we have not the means of determining if they offer any characters which, with the peculiar structure of the shell, might render it desirable to form it into a separate genus. It may be defined and thus named :—

2. CHELODINA SULCATA.

Shell depressed, roundish ovate, brown; shield horny, thick, distinctly concentrically grooved.

Hab. Australia.

Fam. III. TRIONYCIDÆ.

The species of this family, which have the hind legs covered with moveable flaps affixed to the sides of the hinder lobe of the sternum, named *Cryptopus* by MM. Dumeril and Bibron, may be divided into two very distinct geographic genera.

1. EMYDA, Gray.

The margins of the upper shield strengthened with bones; the sternum with three pairs of callosities and a small odd one behind the anterior pair. Asia.

2. CYCLANOSTEUS, Peters.

The margin of the upper shield flexible, without any bones; the sternum with four pairs of callosities and an odd one behind the two anterior pairs; the pair on the hinder lobes small, far apart. Africa.

It has been usually stated that the only known species of the genus *EMYDA* was generally distributed over India; we have in the British Museum specimens only from the Valley of the Ganges. The young specimens all agree in the head and shell being variegated.

We have lately received a specimen of this genus from Ceylon, collected by Mr. Thwaites, which differs in both the above particulars; and in the Museum of the Society there is the shell of an adult animal, sent home from Ceylon by Dr. Kelaart, which shows that it is a most distinct species. They may be thus characterized :—

1. EMYDA PUNCTATA.

Back and upper part of the head pale spotted; the odd anterior callosity small, roundish triangular; the hinder callosity of adult ovate, inner edge semicircular; of young triangular, far apart.

Hab. India, Ganges.

2. EMYDA CEYLONENSIS.

Back and upper part of the head (in spirits) dull pale olive; lips, chin and lower part of the body whitish. The odd anterior sternal

tubercle large, oblong, transverse; the hinder pair of callosities large, close, in adult nearly united, with straight parallel inner edges.

Emyda punctata, Kelaart, Prod. Faun. Ceylon. 179.

Hab. Ceylon.

Dr. Kelaart, in his work on the Ceylon animals, was not aware of the distinctness of this animal from the continental species; he observes that the head is black-lined when alive.

The new species described in this paper will be figured in the Illustrated Catalogue of Tortoises in the Collection of the British Museum, which will shortly be published.

4. DESCRIPTIONS OF TWENTY-THREE NEW SPECIES OF ACHATINELLA, COLLECTED BY MR. D. FRICK IN THE SANDWICH ISLANDS; FROM MR. CUMING'S COLLECTION.

BY DR. L. PFEIFFER.

Sect. BULIMELLA.

1. *A. NOBILIS*, Pfr. *A. testa subimperfata, dextrorsa, turrita, solida, striatula, nitida, fulvida vel griseo-virente, saturatius strigata; spira exacte conica, apice alba, acuta; sutura leviter marginata; anfr. 6½—7 planiusculis, ultimo ⅔ longitudinis subæquante, infra medium obsolete subangulato; apertura obliqua, obauriformi, intus alba; perist. expansiusculo, margine dextro intus late labiato, columellari subadnato.*

Long. 23, diam. 11 mill.

Hab. Oahu.

2. *A. HANLEYANA*, Pfr. *A. testa subrimata, dextrorsa, globoso-conica, solida, lævigata (sub lente exilissime spiraliter striata), nitida, fulva, castaneo-radiata; spira conica, apice minuto, corneo; sutura filo crenulato marginata; anfr. 6, superis planis, sequentibus modice convexis, ultimo spiram fere æquante, rotundato; apertura obliqua, truncato-auriformi, intus alba; plica colum. supera, valida, dentiformi; perist. intus labiato, margine dextro breviter reflexo, columellari dilatato, calloso, subadnato.*

Long. 18, diam. 11 mill.

Sect. NEWCOMBIA.

3. *A. ZEBRINA*, Pfr. *A. testa imperforata, dextrorsa, tenuiuscula, lævigata (sub lente minutissime decussata), nitida, albida, strigis fulgorantibus nigro-castaneis elegantissime picta; spira subturrita, apice obtusa, fusca; sutura filomarginata; anfr. 5 modice convexis, ultimo ⅔ longitudinis fere æquante; apertura vix obliqua, truncato-oblonga, intus lilacina; plica colum. supera, torta, callosa, vix prominente; perist. simplice, recto, fusco-limbato.*

Long. 12½, diam. 6 mill.

4. *A. CHLOROTICA*, Pfr. *A. testa subperforata, ovato-conica, solida, ruguloso-striata, albida, epidermide virente strigatim variegata; spira conica, acutiuscula; anfr. 6, superis convexiusculis, penultimo turgido, ultimo $\frac{1}{2}$ longitudinis subæquante, rotundato; apertura obliqua, truncato-ovali, intus alba; plica colum. supera, levissima, fere nulla; perist. simplice, recto, margine colum. parum dilatato, sublibero.*
Long. 18, diam. $10\frac{1}{2}$ mill.

Sect. LAMINELLA.

5. *A. FERUSSACI*, Pfr. *A. testa sinistrorsa, perforata, turrita, solida, subruditer striata, nuda, coccinea; spira elongata, subconcavo-conica, apice fusca, obtusiuscula; sutura profunda, subcrenata; anfr. $7\frac{1}{2}$, superioribus planiusculis, sequentibus convexis, ultimo globoso, $\frac{1}{2}$ longitudinis non æquante; apertura diagonali, sinuato-semicirculari; columella distincte bicipitata; plica supera obliqua, obtusa, altera compressa, illi subparallela; perist. nigro-limbato, margine externo recto, acuto, columellari dilatato, patente.*
Long. 24, diam. 11 mill.
Hab. Oahu.

6. *A. ALBIDA*, Pfr. *A. testa perforata, ovato-turrita, tenui, irregulariter striata, albida, epidermide pallide fulvescente strigulata; spira conica, apice acutiuscula; sutura levissime crenulata; anfr. 6, superis planis, sequentibus convexioribus, ultimo $\frac{1}{2}$ longitudinis vix æquante, rotundato, peripheria obsolete subangulato; apertura parum obliqua, sinuato-ovali; plica colum. mediana, laminæformi, obliqua; perist. simplice, recto, margine colum. breviter reflexo, sublibero.*
Long. 17, diam. $9\frac{1}{2}$ mill.

7. *A. INFLATA*, Pfr. *A. testa imperforata, conico-globosa, subruditer striata, albida, epidermide nigra infra suturam late fasciatim detrita obducta; spica inflata, in conum brevem, acutum terminata; anfr. $5\frac{1}{2}$, ultimis 3 perturgidis, ultimo spiram æquante; apertura obliqua, sinuato-ovali, intus alba; plica colum. subtransversa, alte ascendente, perist. recto, intus labiato, margine colum. dilatato, calloso, adnato.*
Long. $16\frac{1}{2}$, diam. 10 mill.

- β. *Minor, anfractu ultimo superne castaneo, basi pallido, vel coloribus obversis.*

8. *A. GONIOSTOMA*, Pfr. *A. testa rimata, dextrorsa, turrita, solida, oblique striatula, sub epidermide decidua fulva carneogrisea; spira elongato-conica, apice acuta; sutura subcrenata; anfr. 8 planiusculis, penultimo convexiore, ultimo $\frac{1}{2}$ longitudinis vix superante, rotundato; apertura obliqua, elliptica, utrinque angulata; plica colum. subbasali, compressa, obliqua; perist. recto, basi producto, marginibus callo junctis, dextro intus sublabiato, columellari subdilatato, adnato.*
Long. 16, diam. $7\frac{1}{2}$ mill.

9. *A. EXTINCTA*, Pfr. *A. testa perforata, ovato-turrita, solida, striatula, cretacea; spira elongata, sursum attenuata, acuta; anfr. 7 vix convexiusculis, ultimo $\frac{1}{2}$ longitudinis non attingente, iuxta perforationem subcompresso; apertura viz obliqua, rhombo-ovali, basi angulata; plica colum. compressa, fere a basi ascendente; perist. simplice, recto, marginibus callo crasso, subnodifero junctis, columellari dilatato, libero.*

Long. 16, diam. $7\frac{1}{2}$ mill.

Subfossilis lecta in insula Oahu.

10. *A. TRANSVERSALIS*, Pfr. *A. testa subrimata, ovato-conica, solida, confertim striata, lineis spiralibus impressis distantibus subdecussata, nigro-rufa, epidermide fulvo-grisea, guttatim et fasciatim interrupta, obducta; spira inflato-conica, acuta; anfr. 6 convexiusculis, ultimo $\frac{1}{2}$ longitudinis subæquante; apertura parum obliqua, sinuato-ovali; plica colum. lamellæformi, subbasali, fere transversa; perist. recto, intus albido vel roseo tenuiter labiato.*

Long. 12, diam. 6 mill.

11. *A. GROSSA*, Pfr. *A. testa imperf., dextr., conico-ovata, solida, subruditer striata, castanea; spira ovato-conica, apice acuta, nigricante; sutura pallida, crenulata; anfr. 7, summis planis, lævigatis, sequentibus sensim convexioribus, ultimo $\frac{2}{3}$ longitudinis subæquante; apertura obliqua, sinuato-semiovali, intus albida; plica colum. laminæformi, subtriangulari, fere transversa; perist. recto, acuto, marginibus callo albido junctis, dextro intus sublabiato, columellari adnato.*

Long. 23, diam. 11 mill.

12. *A. LUCTUOSA*, Pfr. *A. testa imperf., dextr., oblongo-conica, solida, striatula, nitidula, bicolore; spira inflato-conica, apice acuta; sutura crenulata; anfr. 6, summis 4 nigris, subplanis, penultimo pallido, convexiore, ultimo $\frac{1}{2}$ longitudinis subæquante, superne pallide fulvescente, infra peripheriam nigricante; apertura parum obliqua, sinuato-semiovali, intus alba; plica colum. laminæformi, subbasali, triangulari; perist. recto, acuto, nigro-limbato.*

Long. 16, diam. 8 mill.

13. *A. GRAYANA*, Pfr. *A. testa imperf., dextr., ovato-conica, solidula, nitidula, griseo-carnea, fasciis castaneis deorsum evanescentibus varie picta; spira inflato-conica, apice acuta, nigra; anfr. $6\frac{1}{2}$, superis planis, radiato-plicatis, penultimo convexo, ultimo spiram fere æquante, leviter striato; apertura subverticali, acuminato-ovali; plica colum. mediana, subtransversa, triangulari; perist. simplice, recto, margine colum. viz dilatato, adnato.*

Long. $21\frac{1}{2}$, diam. 12 mill.

14. *A. GLUTINOSA*, Pfr. *A. testa imperf., dextr., ovato-conica, solidula, arcuata, striatula, sub epidermide glutinosa, lutescente alba; spira subregulariter conica, apice obtusula; sutura levi,*

crenulata; anfr. 7 planiusculis, ultimo spira vix brevior, basi rotundato; apertura subverticali, sinuato-semiovali, intus alba; plica colum. compressa, torta, fere transversa; perist. recto, marginibus callo junctis, dextro sublabiato, columellari calloso, reflexo, adnato.

Long. $11\frac{1}{2}$, diam. 6 mill.

15. *A. UMBILICATA*, Pfr. *A. testa angustissime sed aperte umbilicata, dextr., ovato-conica, tenui, striata, opaca, fusca; spira concaviusculo-conica, apice acuta; anfr. 6 vix convexiusculis, ultimo spira paulo brevior, basi angulato; apertura elliptica, utrinque angulata; plica colum. compressa, profunda, subtransversa; perist. simplice, acuto, margine colum. subdilatato, omnino libero.*

Long. $10\frac{1}{2}$, diam. $5\frac{2}{3}$ mill.

Sect. ACHATINELLASTRUM.

16. *A. CLEMENTINA*, Pfr. *A. testa imperf., dextr., ovato-conica, solida, sublævigata, nitida, virenti-fusca, infra suturam lutescenti-fasciata: spira regulariter conica, obtusa; sutura castanea, impresso-marginata, crenulata; anfr. 6 superne turgidulis, ultimo $\frac{2}{3}$ longitudinis subæquante; apertura elliptica, truncato-auriformi, intus alba; plica colum. supera, mediocri, alba vel carnea; perist. recto, marginibus callo junctis, dextro substricto, intus incrassato-labiato, columellari dilatato, adnato.*

Long. 19, diam. 10 mill.

17. *A. CUNEUS*, Pfr. *A. testa imperf., sinistr., oblongo-turrita, solida, striatula, nitida, albida vel lutescente, fasciis angustis fuscis varie ornata; spira convexo-conica, apice alba, acutiuscula; sutura filo castaneo marginata; anfr. 6 planiusculis, ultimo $\frac{1}{3}$ longitudinis paulo superante; apertura fere diagonalis, semiovali, intus alba; plica colum. mediocri, oblique sub torta; perist. acuto, intus labiato, margine columellari adnato.*

Long. 18, diam. 8 mill.

Sect. AMASTRA.

18. *A. IRREGULARIS*, Pfr. *A. testa imperf., dextr., tenuiuscula, longitudinaliter confertim plicata, nigricante, interdum albidofasciata; spira irregulari, conica, obtusa; sutura subcrenata; anfr. $5\frac{1}{2}$ celeriter accrescentibus, convexis, penultimo gibbo, ultimo $\frac{2}{3}$ longitudinis subæquante, infra medium lævior, interdum corneo; apertura vix obliqua, ovali-oblonga; plica colum. supera, parum prominente; perist. simplice, margine dextro anteriorum subarcuato, columellari dilatato, adnato.*

Long. 9, diam. $4\frac{1}{2}$ mill.

Sect. LEPTACHATINA.

19. *A. DIMIDIATA*, Pfr. *A. testa imperf., ovato-conica, solidula, striatula, nitida, superne nigro-castanea; spira convexo-conica,*

apice obtusula; sutura levi, subcrenulata; anfr. $6\frac{1}{2}$ planiusculis, ultimo spira paulo brevior, a medio ad basin pallide cornea; apertura vix obliqua, sinuato-ovali, intus concolore; plica colum. callosa, subobliqua; perist. albo, recto, intus labiato, margine colum. angusto, adnato.

Long. 11, diam. $5\frac{1}{2}$ mill.

β. *Anfractu ultimo unicolore castaneo, spira pallidior.*

20. *A. SEMICOSTATA*, Pfr. *A. testa subumbilicata, dextr., turrita, solidula, confertim costata, nitida, castaneo-cornea; spira elongata, convexo-conica, obtusula; sutura impressa; anfr. $8\frac{1}{2}$ parum convexis, ultimo $\frac{2}{3}$ longitudinis vix æquante, infra medium lævigato, pallido, attenuato, basi saccato-compressa; apertura parum obliqua sinuato-oblonga; plica colum. lata, obliqua, alba; perist. simplice, recto, margine colum. reflexo, omnino patente.*

Long. $9\frac{1}{2}$, diam. 4 mill.

21. *A. TERES*, Pfr. *A. testa imperf., dextr., cylindræco-oblonga, tenuiuscula, leviter striatula, nitidissima, cornea; spira sensim attenuata, apice obtusula; sutura crenulata, saturate castanea, in anfractu ultimo impresso-marginata; anfr. 7 planiusculis, ultimo $\frac{1}{4}$ longitudinis paulo superante, antice subascendente; apertura subobliqua, sinuato-semiovali; plica colum. subcallosa, torta, obliqua; perist. simplice, recto.*

Long. 10, diam. 4 mill.

22. *A. ORYZA*, Pfr. *A. testa subrimata, fusiformi, striatula, cornea (?) ; spira convexo-conica, apice obtusula; sutura levi, simplice; anfr. 7 vix convexiusculis, ultimo $\frac{2}{3}$ longitudinis subæquante, basi attenuato; apertura vix obliqua, acuminato-ovali; plica colum. subcompressa, acuta; perist. simplice, recto, margine colum. subreflexo, adnato.*

Long. 8, diam. $3\frac{1}{2}$ mill.

Hab. Subfossilis in insula Oahu.

23. *A. MARGARITA*, Pfr. *A. testa subrimata, dextr., ovato-oblonga, tenui, striatula, pellucida, pallide cornea; spira ovato-conica, obtusula; sutura submarginata; anfr. 6, superis planiusculis, penultimo convexiore, ultimo $\frac{2}{3}$ longitudinis subæquante, basi subattenuato; apertura subverticali, elliptico-ovali, basi subangulata; plica colum. mediana, parvula, dentiformi; perist. simplice, recto, albido-limbato.*

Long. $6\frac{1}{2}$, diam. 3 mill.

Sect. AURICULELLA.

To this section may be referred:—

24. *ACHATINELLA LURIDA*, Pfr. (*Tornatellina castanea*, Pfr. Mon.)

25. *ACHATINELLA OBELISCUS*, Pfr. (*Balca Newcombi*, Pfr. Mon.)

5. DESCRIPTIONS OF SIXTEEN NEW SPECIES OF ACHATINELLA,
FROM MR. CUMING'S COLLECTION, COLLECTED BY
DR. NEWCOMB IN THE SANDWICH ISLANDS.
BY DR. L. PFEIFFER.

1. *A. DWIGHTI*, Newc. *A. testa perforata, sinistrorsa, solida, oblongo-conica, ruditer striata, striis confertis spiralibus decussata, fusculo et albo variegata s. marmorata; spira conica, obtusula; anfr. 6½ planiusculis, ultimo spira paulo brevior; apertura obliqua, obauriformi; plica columellari obliqua, levi; perist. albo, intus crasse labiato, margine externo expanso, columellari dilatato, calloso, sublibero.*

Long. 24, diam. 11½ mill.

Hab. Molokai.

2. *A. MANIENSIS*, Newc. *A. testa subperforata, ovato-oblonga, tenuiuscula, longitudinaliter irregulariter striata, sub lente striis spiralibus confertissimis decussata, haud nitente, albida, strigis fusco-corneis serratis variegata; spira regulariter conica, apice obtusa; sutura levi, vix submarginata; anfr. 5½ planiusculis, ultimo 2½ longitudinis subæquante, basi subattenuato; apertura parum obliqua, oblonga; plica colum. obsoleta; perist. simplice, recto, fusco-limbato, margine colum. fornicatim reflexo, subadnato.*

Long. 13, diam. 6 mill.

Hab. Mani.

3. *A. TETRAO*, Newc. *A. testa subperforata, sinistrorsa, globoso-conica, pallida, infra suturam late rubro-fasciata, undique epidermide virenti-fusca dense reticulata; spira conica, acutiuscula; anfract. 6½, summis subplanis, reliquis perconvexis, ultimo globoso, spira paulo brevior; apertura obliqua, semiovali, intus alba; plica colum. laminæformi, subobliqua; perist. simplice, recto, acuto, margine columellari roseo, sublibero.*

Long. 16, diam. 8½ mill.

Hab. Ranaï.

4. *A. REMYI*, Newc. *A. testa subimperfecta, sinistrorsa, oblongo-conica, plicatula, rubella, lineis fulguratis fuscis amœne variegata; spira elongata, apice nigricante, acuta; anfr. 7 modice convexis, ultimo ½ longitudinis vix superante; apertura fere diagonali, sinuato-ovali, intus purpurascens; plica colum. parum prominente, subduplicata; perist. simplice, recto, acuto, margine colum. rubro, subadnato.*

Long. 17½, diam. 8 mill.

Hab. Hawaii.

5. *A. HUMILIS*, Newc. *A. testa subperforata, oblongo-conica, solidula, subruditer striata, griseo-carnea; epidermide nigra fere omnino obducta; spira convexo-conica, apice nigra, acuta; anfr. 6½ infra suturam turgidis, medianis pallide reticulatis, ultimo ½ longitudinis paulo superante; apertura parum obliqua, sinuato*

ovali, intus livide purpurascente; plica colum. mediocri, compressa, obliqua; perist. simplice, recto, acuto, margine colum. dilatato, reflexo, subadnato.

Long. 18, diam. $8\frac{1}{2}$ mill.

Hab. Molokai.

6. A. PETRICOLA, Newc. *A. testa subperforata, dextrorsa, ovato-conica, tenuiuscula, striatula, fusca; spira convexo-conica, acutiuscula; sutura levi; anfr. $5\frac{1}{2}$ convexiusculis, ultimo $\frac{3}{4}$ longitudinis subæquante; apertura parum obliqua, sinuato-ovali, intus concolore; plica colum. tenui, compressissima, parum obliqua; perist. simplice, recto, intus albo limbato, margine colum. reflexo, subpatente.*

Long. $9\frac{1}{2}$, diam. 5 mill.

Hab. Modonai.

7. A. DUNKERI, Cuming, MSS. *A. testa imperforata, oblongo-turrita, solidiuscula, lævigata, pallide carnea, strigis confertis fusculis ornata, lineis 1 vel 2 nigris sæpe cincta; spira turrita, apice acutiuscula, alba; sutura leviter marginata, pallida; anfr. $6\frac{1}{2}$ viz convexiusculis, ultimo $\frac{3}{4}$ longitudinis fere æquante; apertura obliqua, truncato-auriformi; plica colum. alba, valida, dentiformi, subsulcata; perist. recto, acuto, pone limbum fuscum albo labiato.*

Long. 24, diam. 11 mill.

8. A. FULVA, Newc. *A. testa subperforata, turrito-conica, solida, striatula et sub lente subtilissime decussata, nitida, luteo-fulva; spira subconcavo-conica, apice alba, acuta; sutura filomarginata; anfr. $6\frac{1}{2}$, superis planis, sequentibus convexis, ultimo $\frac{1}{2}$ longitudinis paulo superante, infra suturam turgido, basi saccato; apertura obliqua, subtetragono-auriformi; plica colum. supera, nodiformi, aurantiaca; perist. recto, intus labiato, margine dextro substricto, columellari dilatato, fornicato-reflexo.*

Long. $18\frac{1}{2}$, diam. 9 mill.

9. A. OVIFORMIS, Newc. *A. testa sinistrorsa, imperforata, ovato-conica, solida, striatula, sub epidermide nitida, olivacea alba, fusco 1-3 fasciata; spira convexo-conica, apice acutiuscula, alba; sutura profunde marginata; anfr. 5 viz convexiusculis, ultimo $\frac{3}{4}$ longitudinis subæquante; apertura fere diagonali, auriformi; plica colum. mediocri, dentiformi, rubella; perist. recto, marginibus callo tenui junctis, externo intus labiato, columellari dilatato, adnato.*

Long. 17, diam. $8\frac{1}{2}$ mill.

Hab. Oahu.

10. A. UNDULATA, Newc. *A. testa sinistrorsa (rarius dextrorsa), imperforata, solida, striatula, nitida, fulva, strigis undulatis fuscis vel nigro-castaneis picta; spira conica, apice acuta, alba; sutura marginata; anfr. $5\frac{1}{2}$ modice convexis, ultimo $\frac{3}{4}$ longitudinis subæquante, latere subcompresso; apertura fere diagonali, obauri-*

formi, intus alba; plica colum. valida, dentiformi; perist. simplice, recto, fusco-limbato.

Long. 16, diam. 9 mill.

Hab. Oahu.

11. A. NIGRA, Newc. *A. testa imperforata, globosa-conica, tenuiuscula, confertim striata, albida, epidermide nigricante fere omnino obducta; spira concavo-conica, apice acuta; anfr. 6, superis planis, penultimo convexo, ultimo spiram subæquante, inflato, plicis spiralibus irregulariter minuto; apertura obliqua, sinuato-ovali; plica colum. subtransversa, linguæformi; perist. recto, acuto, intus tenuiter labiato, marginibus callo tenui junctis, columellari obsoleto.*

Long. 17, diam. 10½ mill.

Hab. Mani.

12. A. PULLA, Newc. *A. testa imperforata, acuminato-ovata, solida, distincte striata, lutescente, epidermide fusca varie fasciata, vel præter fasciam pallidam omnino obducta; spira inflata, versus apicem acutum attenuata; sutura pallida; anfr. 6, primis planis, penultimo modice convexo, ultimo ¾ longitudinis subæquante; apertura parum obliqua, sinuato-ovali; plica colum. dentiformi, subacuta, alba; perist. simplice, recto, margine columellari adnato.*

Long. 11, diam. 6 mill.

Hab. Ranaï.

13. A. SUCCINCTA, Newc. *A. testa imperforata, ovata, tenuiuscula, dense striolata, pellucida, cornea, linea suturali et fascia lata fuscescentibus ornata; spira ventroso-conica, obtusula; anfr. 6½ viz convexiusculis, ultimo ¾ longitudinis subæquante, basi levigato; apertura viz obliqua, sinuato-ovali; plica colum. obliqua, compressa, violaceo-submarginata; perist. simplice, recto, intus tenuiter albido-labiato.*

Long. 13, diam. 6½ mill.

Hab. Wahai.

14. A. ELEVATA, Newc. *A. testa imperforata, oblongo-turrita, solidula, longitudinaliter (ad suturam distinctius) striata, nitida, corneo-lutea, castaneo-hifasciata; spira turrita, apice obtusa; anfr. 8 planiusculis, ultimo ¼ longitudinis subæquante, basi subattenuato; apertura verticali, elliptico-ovali; plica colum. compressa, obliqua, pallide lilacea; perist. recto, obtuso, margine dextro antrorsum subdilato.*

Long. 11½, diam. 4½ mill.

15. A. OBTUSA, Newc. *A. testa imperforata, oblonga, sublevigata, nitida, pellucida, castaneo-cornea; spira cylindrico-turrita, apice obtusa; sutura submarginata; anfr. 6½ subplanulatis, ultimo ¾ longitudinis subæquante; apertura verticali, acuminato-ovali, basi subangulata; plica colum. levi, obliqua; perist. simplice, recto, pallide limbato, marginibus callo tenui junctis.*

Long. 10, diam. 4 mill.

16. *A. APICATA*, Newc. *A. testa imperforata, globoso-conica, solida, levigata, nigricante vel fusca, pallide irregulariter radiata et subfasciata; spica conica, apice acutiuscula, cinnamomea vel hepatica; anfr. 6, superis planis, penultimo convexo, ultimo globoso, $\frac{2}{3}$ longitudinis vix æquante; apertura obliqua, subtrigonovale; plica colum. supera, dentiformi, lilacea; perist. recto, intus lilaceo-labiato, margine colum. per dilatato, incrassato, adnato.*
Long. $18\frac{1}{2}$, diam. 12 mill.

6. DESCRIPTIONS OF FIVE NEW SPECIES OF TERRESTRIAL MOLLUSCA, FROM THE COLLECTION OF H. CUMING, ESQ.
BY DR. L. PFEIFFER.

1. *LEPTOPOMA LOWI*, Pfr. *L. testa perforata, globoso-turbinata, tenui, sub lente confertissime spiraliter striata, pellucida, fulvo-cornea, ad suturam fascia alba subopaca ornata; spira turbinata, acuta; anfr. 5 convexis, medianis liris nonnullis obsoletis notatis, ultimo rotundato; apertura obliqua, subcirculari, intus margaritacea; perist. albo, subrectangule expanso, marginibus callo tenuissimo junctis, columellari superne subexciso.*

Diam. maj. 14, min. 12, alt. 11 mill.

β. Minor, anfr. ultimo conico-variegato, medio albido-subfasciato.

Hab. Isle of Labuan (Mr. Hugh Low).

2. *PLECOTREMA BICOLOR*, Pfr. *Pl. testa subumbilicata, ovato-conica, solida, spiraliter confertim sulcata, rugulis longitudinalibus irregulariter tuberculosa, vix nitidula, brunnea, pallide fasciata; spira convexiusculo-conica, apice pallida, acuta; anfr. 9 vix convexiusculis, ultimo spira paulo longiore, superne turgidulo, basi attenuato, circa perforationem non perviam compresso, antice crista elevata munito et contracto; apertura vix obliqua, oblonga; plicis parietalibus 2 parallelis, inferiore extus breviter bicruri; plica colum. parvula, transversa; perist. vix patulo, marginibus callo junctis, dextro bidenticulato.*

Long. 6, diam. $3\frac{1}{2}$ mill.

Hab. Port Jackson (Mr. Strange).

3. *CLAUSILIA BLANDIANA*, Pfr. *Cl. testa non rimata, fusiformi-turrita, solidula, oblique obsolete striata, diaphana, cornea; spira turrita, obtusa; sutura levi, rufo marginata; anfr. 9 regulariter accrescentibus, parum convexis, ultimo angustato, deorsum protracto, basi rotundato, antice rufescente, distinctius striato; apertura oblique piriformi-circulari; lamellis convergentibus, superiore valida, marginali, altera conspicua, tenuiore; lunella distincta, angusta; plica palatali 1 supera, ad lamellam superiorem producta; subcolumellari inconspicua; perist. albo, tenui, expanso et reflexiusculo, margine sinistro angustiore.*

Long. 19, diam. $4\frac{1}{2}$ mill.

Hab. Santa Fé de Bogota, Columbia.

4. *ACHATINA SCULPTA*, Pfr. *A. testa conico-oblonga, solida, plicis longitudinalibus subarcuatis validis sculpta, straminea; spira regulariter attenuata, obtusa; anfr. 8 planiusculis, ultimo $\frac{1}{2}$ longitudinis paulo superante, antice subascendente; apertura subverticali, sinuato-ovali; columella breviter arcuata, oblique truncata; perist. simplice, recto, margine dextro antrorsum subarcuato, columellari tenuiter calloso.*

Long. $8\frac{1}{2}$, diam. $3\frac{1}{2}$ mill.

Hab. Oahu, Sandwich Islands (Mr. Frick).

5. *ACHATINA COMORENSIS*, Pfr. *A. testa ovato-turrita, solida, leviter et irregulariter striatula, sub epidermide decidua, fulva alba; spira elongata, apice obtusula; anfr. 7, superis subplanis, penultimo convexiore, ultimo $\frac{1}{2}$ longitudinis paulo superante, basi subattenuato; apertura subverticali, elliptica, basi subcanaliculata, columella ad basin aperturae protracta, oblique subtruncata; perist. obtuso, marginibus callo crassiusculo junctis.*

Long. 34, diam. 13 mill.

Hab. Comoro Islands.

Nov. 27th, 1855.

Dr. Gray, F.R.S., in the Chair.

The following papers were read :—

1. ON A NEW SPECIES OF SOMATERIA, AND THE FEMALE OF *LAMPRONETTA FISCHERI*, BRANDT. BY G. R. GRAY, F.L.S. ETC.

(Aves, Pl. CVII.—CVIII.)

I have the pleasure of exhibiting Mr. Adams's drawing of a new species of *Somateria*, of which several specimens were collected by that gentleman during the voyage of H.M.S. *Enterprise*. The large drawing exhibits the male and female, while the lesser drawing contains, in addition to the two sexes, the male in change. It will at once be seen that this species is very similar to *Somateria mollissima*, but is easily distinguished from it by being larger, and by a black mark on the throat, which is like the one found on that part of the *Somateria spectabilis*; and by the white longitudinal mark on the top of the head being narrower and thereby less conspicuous than that found on the head of *Somateria mollissima*; while the yellow on the sides of the head, which is tinged with green, extends below the black towards the eyes; the black is less rounded posteriorly. The bill of the male also differs by being orange-yellow with a white nail; while that of the female is dusky green as in the com-

mon eider. The feet of both sexes are brownish yellow. A specimen of this species was added to the British Museum Collection in 1851, which was collected during the voyage of H.M.S. Herald at "Kotzebue Sound." From the black mark on the throat, which is in the form of a reversed V, I have named the species *Somateria V-nigra*. (Pl. CVII.)

I take this opportunity of also exhibiting a beautiful drawing of the *Lampronetta Fischeri* of M. Brandt (Pl. CVIII.), of which only one example was known to exist in collections, viz. in the Museum of the Academy at St. Petersburg. Mr. Adams had the good fortune to obtain, not only the male, but the female, during the voyage, as also the young male in change which is exhibited in the smaller drawing. As the male has been well described and figured by M. Brandt*, it is unnecessary for me to repeat it; but as the female was unknown at that period, I will therefore point out the chief differences which it exhibits from its allied species. In general appearances it bears a great similarity to the female of *Somateria spectabilis*, but may be at once distinguished by the base of the culmen being feathered to beyond the nostrils and the space round each eye being paler than the rest of the head and speckled with minute spots of black; this space being the position of the white velvety spot round the eyes of the adult male.

M. Brandt's specimen of the male was obtained from Norton Sound on the coast of Russian America, and I believe the pair now in the British Museum's Collection was from the same locality.

I may observe that Mr. Adams had called the species, from the rich blue colour of the eyes, "Blue-eyed Eider Duck."

As M. Brandt's subgeneric name of *Lampronetta* is so near *Lampronessa* of Wagler, it may be thought advisable to change it to *Arctonetta*.

2. NOTE ON THE GENUS *LEGRIOCINCLUS*, LESSON, AND ITS SYNONYMS. BY PHILIP LUTLEY SCLATER, M.A. ETC.

In his last published work on natural history, entitled 'Description des Mammifères et Oiseaux,' which is part of the series known as 'Complément aux œuvres de Buffon,' M. Lesson has elevated to generic rank by the name of *Legriocinclus*, a bird previously described in the 'Annales des Sciences Naturelles' (ix. p. 168, anno 1838) as *Petrodroma mexicana*. While lately in Paris I was favoured by Prince Charles Bonaparte with a sight of several volumes of very beautiful coloured drawings of birds and other animals of which M. Lesson in his lifetime had published descriptions only. M. Lesson's descriptions, as is well known, are so short and often so inaccurate as to render identification of the originals almost impossible, and these drawings are therefore very valuable, and, as they are to be disposed of, will, it is to be hoped, pass into the possession of some public institution, where access to them may always be had. Among them

* Mém. de l'Acad. Imp. Sci. de St. Pétersbourg, 1849, p. 1. t. i.

is a plate of the so-called *Legriocinclus*, which, there is no difficulty in perceiving at a glance, is a member of Lafresnaye's genus *Ramphocinclus*, and so closely resembling the *R. brachyurus*, the type of that genus, as to leave little doubt that the two generic names are co-equal. But if Lesson's locality is correct (Vera Cruz), which, however, I am hardly inclined to believe, the *Legriocinclus mexicanus* may possibly be a new species of this peculiar form—hitherto considered as confined to the Antilles, but thus extended geographically to the mainland.

Three species of *Ramphocinclus* only are given by Lafresnaye in his article in the 'Revue Zoologique' (1843, p. 67). Of the first of these—the type of the genus—*R. brachyurus* (*Turdus brachyurus*, Vieill. Nouv. Dict. xx. 255, et Enc. Méth. p. 655), the Paris Museum contains several fine examples from the islands of S. Lucia and Guadeloupe. Vieillot says his bird was from Martinique, which is very probable, as that island is situate between the other two.

Upon reading attentively Lafresnaye's description of his second species of the genus *R. tremulus*, I think there can be little doubt that if not absolutely identical with, it is at all events a very close ally of the bird, which Mr. Gould described in these Proceedings, as long ago as 1835, under the name of *Stenorhynchus ruficauda*. There are two specimens of this bird in the British Museum, from the island of Nevis.

Stenorhynchus, having been previously employed in Zoology, was changed by Mr. G. R. Gray in 1840 to *Cinclocerthia*.

Prince Bonaparte, in his 'Conspectus' (p. 223), has somehow or other confounded the third species of this same genus along with *Campylorhynchus scolopaceus* of Spix which is quite a different form and is the type of the wren-like genus *Campylorhynchus*, and *Thryothorus longirostris* of Vieillot, which he likewise quotes as synonymous, is, I believe, a true *Thryothorus*. Again, *Zoothera cincllops* of the same work (p. 253), since generified into *Cinclops* (*Cinclops melanoleucus* of Mr. G. R. Gray's lately published List of genera), seems to be nothing more than a bird of this genus—probably *R. brachyurus*, though it is dangerous to draw positive conclusions from so meagre a description.

Under these circumstances I propose to reduce into one group, or at all events to place in close juxtaposition, the following six generic terms, some of which have hitherto been arranged in widely different families :—

1. STENORHYNCHUS, Gould (1835), P. Z. S. p. 186.
2. CINCLOCERTHIA, G. R. Gray (1840), List of Gen. p. 22.
3. RAMPHOCINCLUS, Lafr. (1843), Rev. Zool. p. 66.
4. HERMINIERUS, Lesson, ubi?
5. LEGRIOCINCLUS, Lesson (1847), Descr. d. Mamm. et Ois. p. 278.
6. CINCLOPS, Bp. (1854), Notes Ornithologiques, p. 25.

Of these Mr. G. R. Gray's name *Cinclocerthia* is the oldest that can be adopted.

Note.—Since writing the above, I have carefully examined the two specimens of *Cinclocerthia ruficauda* in the British Museum. They seem to agree in every respect with Lafresnaye's description of *Ramphocinclus tremulus*, and, as the islands of Nevis and Guadaloupe are so near, I think we may reasonably conclude that these two birds are not specifically distinct. The rectrices are twelve in number, and not ten, as Mr. Gould supposed (P. Z. S. 1835, p. 186) might be the case.

The three species of this group ought therefore apparently to stand as follows:—1. *CINCLOCERTHIA RUFICAUDA* (*Stenorhynchus ruficaudus*, Gould; *C. ruficauda*, G. R. Gray; *Ramphocinclus tremulus*, Lafr.). 2. *CINCLOCERTHIA GUTTURALIS* (*Ramphocinclus gutturalis*, Lafr.); and, 3. *CINCLOCERTHIA BRACHYURA* (*Turdus brachyurus*, Vieill.; *Ramphocinclus brachyurus*, Lafr.; *Zoothera cinclops* et *Cinclops melanoleucus*, Bp.). P. L. S.

3. DESCRIPTION OF A NEWLY DISCOVERED TANAGER OF THE GENUS BUARREMON.

BY PHILIP LUTLEY SCLATER, M.A. ETC.

(Aves, Pl. CIX.)

Through the kindness of Sir William Jardine I am enabled to exhibit a specimen of a very distinct species of *Buarremon*, which Professor Jameson of Quito has lately transmitted to this country. It was obtained by him during a recent expedition into the eastern Cordillera of the Andes near Quito at an elevation of 6000 feet above the sea-level. In form and size it is similar to *B. pallidinuchus*, but the style of coloration is different and more nearly resembles that of *B. schistaceus*. Sir William Jardine has named it *leucopterus*, from the conspicuous white spot on the wing. The area of the genus *Buarremon* appears to extend along the Andean range from Bolivia into Southern Mexico, the vicinity of Bogota being perhaps the principal *sedes* or *focus*, where no less than seven or eight species occur. The present bird may be characterized as follows:—

BUARREMON LEUCOPTERUS (Pl. CIX.).

B. schistacescenti-niger, alis caudaque obscurioribus; pileo ochraceo-rufo; macula utrinque anteoculari et speculo alari conspicuo cum toto corpore subtus albis; lateribus in cinereum trahentibus; capitis lateribus nigris; tectricibus alarum inferioribus albis; rostro pedibusque nigris.

Long. tota 6·2; alæ 2·8; caudæ 2·7.

Hab. in rep. Equatoriana (Jameson).

4. NOTICE OF SOME NEW SPECIES OF BIRDS. BY FREDERIC MOORE, ASSIST. MUS. EAST INDIA COMPANY.

Genus OTOCORIS, Bonaparte.

OTOCORIS LONGIROSTRIS, Gould, MSS.

Allied in colour to *O. penicillata*, and in the markings of the head and breast, but differs in its larger size, considerably more lengthened bill, wings and tail, and thicker toes; and in the feathers of the back being broadly centred with brown.

Length $7\frac{3}{4}$ inches; of wing 5 inches; tail $3\frac{3}{4}$ ths; bill to frontal plumes $\frac{6}{10}$ ths; to gape $\frac{3}{4}$ ths; tarsus $\frac{1}{2}$ ths; middle toe and claw $\frac{1}{4}$ ths; hind ditto $\frac{1}{10}$ ths of an inch.

Hab. Neighbourhood of Agra. In Mr. Gould's Collection.

Genus EMBERIZA, Linn.

EMBERIZA STRACHEYI, Moore.

Affined to *E. Cia*, but differs in having the markings about the head more broadly developed, and of a deeper black colour, forming three well-defined black bars, as seen laterally; the throat and sides of neck being whiter, and ashy on the front of the neck only, the breast and the rest of the under-parts being uniform bright rufous-brown, which colour is also prominent on the back, and especially on the scapulars, rump and upper tail-coverts.

Length 6 inches; of wing $3\frac{3}{4}$ ths; tail 3; tarsus $\frac{1}{4}$ ths of an inch.

Hab. Kumaon. In Mus. East India Company.

EMBERIZA CASTANEICEPS, Gould, MSS.

Also affined to *E. Cia*. Crown and ear-coverts deep chestnut-brown; superciliary streak, base of upper mandible, throat, front and sides of neck ashy white; behind the ears and nape ashy; a spot before the eye and streak from base of lower mandible down the sides of the throat black; back, scapulars, and rump rufous-brown, the two former having blackish centres to the feathers; wings dusky black, the feathers margined with rufous-brown; tail dusky black, the two centre feathers broadly margined with rufous-brown, the two outer tipped obliquely with white for nearly the whole length; breast and flanks rufous-brown, and paling towards the centre of the belly; upper mandible dark-horn, lower paler.

Length $5\frac{1}{4}$ inches; wing $2\frac{3}{4}$ ths; tail $2\frac{3}{4}$ ths; tarsus $\frac{1}{4}$ of an inch.

Hab. Kintang in China. In Mus. East India Comp., J. Gould, Esq.

Genus PROPASSER, Hodgson, Gray's Zool. Misc. p. 84 (1844);
P. Z. S. 1845, p. 36.

PHENICOSPIZA, Blyth, J. A. S. Beng. xxiii. p. 213 (1854).

PROPASSER THURA.

Carpodacus Thura, Bonaparte et Schlegel, Monogr. des Loxiens, t. 23. Bonap. Consp. Gen. Av. p. 531 (male).

Propasser rodopeplus, part. Hodgson.

Hab. Nepal. In Mus. East India Comp. Brit. Mus., J. Gould, Esq.

This species may be distinguished from the true *P. rodopeplus*, by its rather smaller and a trifle more pyrrhuline bill; the colour of the male above being hair-brown, the feathers centred with blackish, and the lesser range of wing-coverts *only* being crimson-tipped; the under-parts, rump and upper tail-coverts, cheeks, forehead, and superciliary streak is pale silvery-crimson, the end of the latter and the centre of the belly being pure white; the crimson feathers of the head and throat being centred also with white, and the crimson colour being deepest at the base of the bill; whereas, in *P. rodopeplus* the male above is dark crimson-brown, and having *both* ranges of wing-coverts and the *tertiaries* pale crimson-tipped. The female of *P. Thura* (which is now for the first time described) may be distinguished from the same sex of *P. rodopeplus* by being paler above and having paler centres to the feathers; the colour of the under-parts being considerably more uniform; having also but faint centres to the feathers. *P. rodopeplus* is a trifle larger than *P. Thura*.

The Prince Charles Lucien Bonaparte has compared these specimens, and his Highness also verifies their distinctness.

PROPASSER PULCHERRIMUS, Hodgson.

Propasser pulcherrimus, Hodgson, Gray's Zool. Misc. (1844), p. 85.

Hab. Himalaya. In Mus. East India Comp. Brit. Mus., J. Gould, Esq.

The male differs from *P. rodochrous* in having the forehead, superciliary streak, cheeks, throat, and under-parts, with the rump of a paler or more silvery-crimson colour, being in some lights very silvery; the upper parts, with the crown, are dusky-brown with pale crimson-tinged edges to each feather. The female differs from the same sex of *P. rodochrous* in having the under-parts dusky white, instead of rufescent, and above the colours are also less rufescent.

The size is the same as *P. rodochrous*, excepting that in *P. pulcherrimus* the wing is longer in both sexes.

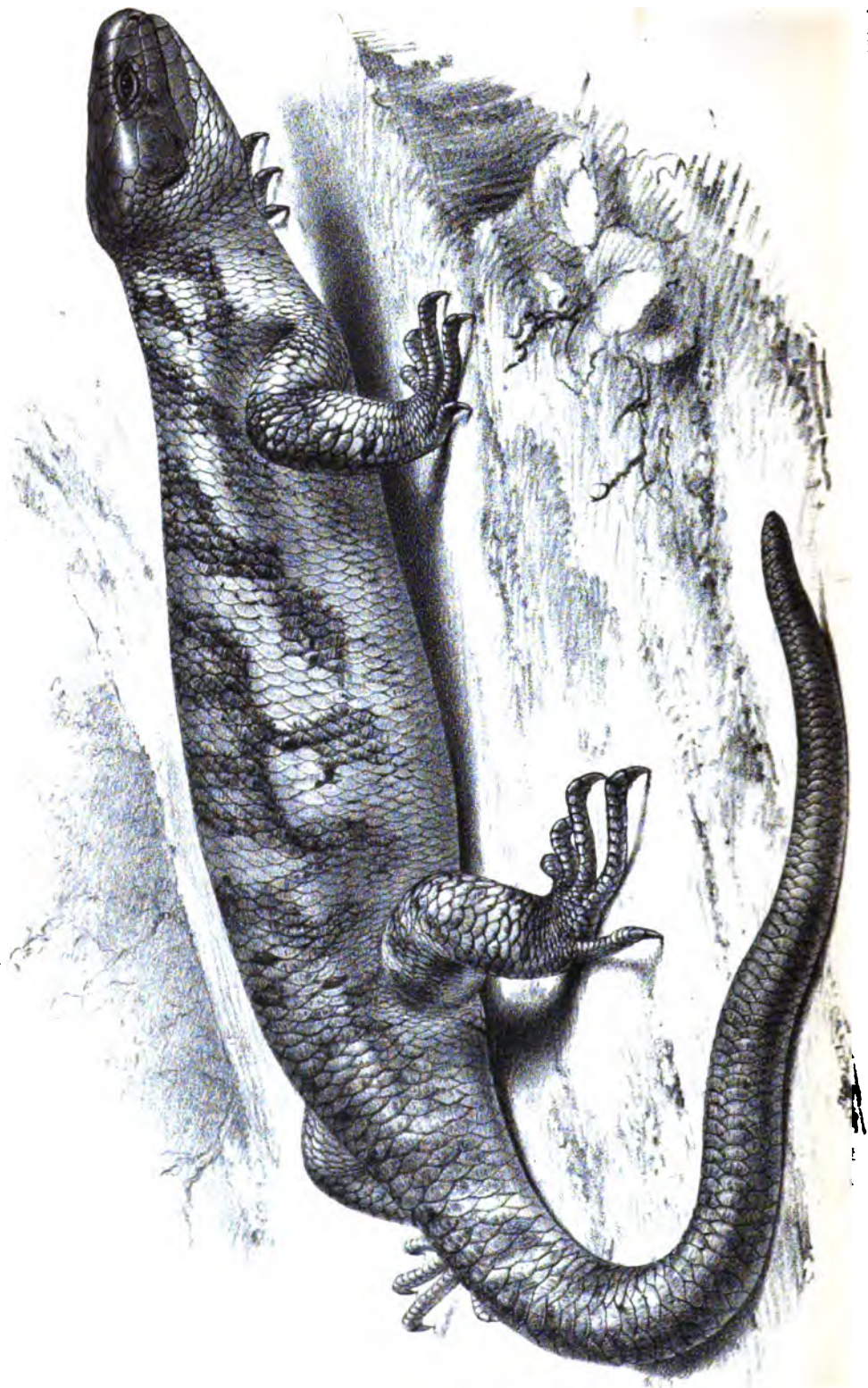
Remarks.—Both sexes of this species and *P. rodochrous* were sent from Nepal by B. H. Hodgson, Esq., under the name of *pulcherrimus*, which name, upon examining his original drawings in the British Museum, we find refers to the true *rodochrous* and not to the present species; but, as that indefatigable naturalist applied the name to both birds, we deem it but correct to retain the same for the present bird.

Genus *LINOTA*, Bonaparte.

CANNABINA, Brehm.

LINOTA BREVIROSTRIS, Gould.

Linota brevirostris, Gould, Bonap. Geogr. et Comp. List of B. p. 34 (1838).



?*Fringilla bella*, Hempr. et Ehrenberg, Mus. Berol.

Hab. Erzeroum and Afghanistan. In Mus. East India Comp. et J. Gould, Esq.

Allied to *L. montium*, but distinguished from that species by its lighter colour, and the male having the pink colour on the rump paler; the axillaries and the basal edge of the inner web of the primaries and secondaries pure white; the tail being margined on the whole outer and broadly on the inner web also with pure white; the primaries and secondaries above are also broadly margined exteriorly with white. The female is also paler and broadly edged as in the male with white.

Length 5 inches; of wing $3\frac{3}{4}$ ths; of tail $2\frac{1}{2}$ ths; centre feathers $\frac{1}{4}$ inch less; bill to frontal plumes $\frac{3}{10}$ ths; to gape $\frac{1}{2}$ an inch; tarsus $\frac{1}{10}$ ths; centre toe and claw $\frac{1}{2}$ ths; and hind ditto $\frac{1}{2}$ an inch.

Remark.—Cabanis in Catal. Birds Mus. Heine, p. 161, states that "the bill of *F. bella*, of Hempr. and Ehrenb., is a trifle larger than in *L. cannabina*, Linn., but in colour almost agrees with *L. fringillirostris*, Bonap. et Schlegel, Monog. Loxiens, t. 49. p. 45.

5. NEW GENUS OF FISH-SCALED LIZARDS (SCISSOSARÆ), FROM NEW GUINEA. BY J. E. GRAY, Ph.D. F.R.S., ETC. ETC.

(Reptilia, Pl. VIII.)

The Lizard which I have the pleasure of bringing before the Society this evening, was presented to the British Museum, with other most interesting and novel specimens, by Mr. John MacGillivray, who accompanied H.M.S. Herald as naturalist during her voyage in the Australasian seas.

CORUCIA.

Head broad, flat topped; nostrils ovate, oblique, simple, not prolonged behind, on the middle of the lower part of the nasal shields; supranasal shields none; rostral square; internasal one, large, 8-sided, broader behind; frontal-nasal two, moderate, band-like, transverse; lateral-frontal one small, subtrigonal, nearly equal-sided, frontal-parietals two rhombic, contiguous at the angle; interparietal one rhombic, elongate; eyebrows covered with band-like shields, lower eyelid with a series of larger opaque scales; temple covered with large shields; ears large, simple, edged in front.

Body fusiform, compressed scales, 6-sided, smooth, with 3, 5 or 7 grooves, seen through the skin, of chin and underside of the body thinner, smooth.

Legs strong; toes five, cylindrical, elongate, unequal, with a series of band-like shields beneath; claws strong, curved.

Tail elongate, tapering, rather compressed, scales of upper like those of the back, but rather larger, with a central series of broad hexangular shields beneath.

Hab. Australasia.

This genus belongs to the same section in the Museum Catalogue as *Ateuchoglossus*, characterized by the simple nostril and scaled No. CCXCVIII.—PROCEEDINGS OF THE ZOOLOGICAL SOCIETY.

opaque lower eyelids. It differs from that genus in the smoothness of the scales, the shielded underside of the tail and several other characters.

CORUCIA ZEBRATA. (Pl. VIII.)

Pale yellowish-white (in spirits); back with irregular blackish-brown cross-bands; upper part of limbs and tail blackish, varied; head dark-brown.

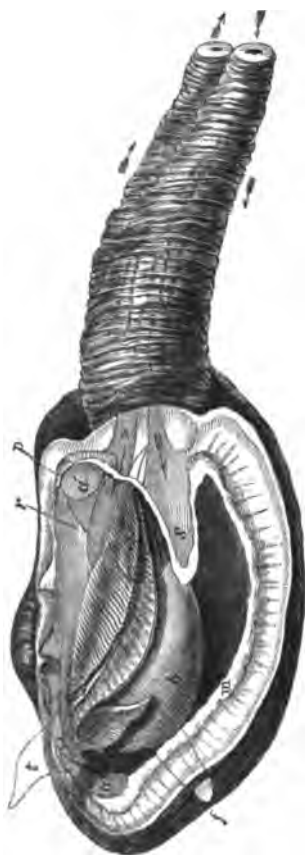
Hab. New Guinea, the Island of San Christoval, *John MacGillivray, Esq.*, two adult and young specimens.

Length of adult nearly 2 feet.

6. ON PANOPÆA ALDROVANDI, Lam.

By S. P. WOODWARD, F.G.S.

The specimen of *Panopæa Aldrovandi*, preserved in spirits, and now



PANOPÆA ALDROVANDI, Lam.

(*Chama glycymeris*, Aldr.)

One fourth natural size.

a, a', Adductor muscles.

p, p', Pedal muscles.

r, Position of renal organ.

t, Labial tentacles, or palpi.

b, Body.

f, Muscular foot.

m, Pallial muscle, or retractor of the mantle.

s, Siphonal muscle.

The arrows indicate the inhalant, or branchial siphon, and the exhalant or anal siphon, communicating with the channels above the gills.

exhibited to the Zoological Society, was presented by Capt. Guise to

the Gloucester Museum, and was lent me for examination through the kindness of J. W. Wilton, Esq., of Gloucester.

This species is found at Sicily, and on the south coasts of Spain and Portugal; but not, so far as we are aware, at Mogador or the Canaries.

On the coast of Sicily, according to M. Philippi, it is rare, and only found between La Trezza and Aci Castello. M. H. Crosse, who purposely visited this locality, found a rocky beach in which it could not possibly live, and the only spot where the fishermen were acquainted with it was the village of Giardini, near the sandy bay of Taormina; even there only odd valves were procured, and he says it would be exceedingly difficult to obtain the animal on account of the absence of tides*.

Capt. Guise has favoured me with the following note:—

"The *Panopæa* was collected, together with many of the rarest forms of Mediterranean Mollusca, by the Rev. L. Larking, on the coast of Sicily; the animal, when alive in a vessel of sea-water, was a most lively mollusk—slashing its siphons about, and discharging the water with the force of a piston."

There appears to be no description of the animal published. Philippi had not seen it, nor Valenciennes, at the time he wrote the monograph of the genus for Chenu's 'Conchological Illustrations.' Being the type of the genus *Panopæa*, I was the more desirous of examining it, especially as British naturalists have taken their notion of *Panopæa* from the British shell called "*Panopæa Norvegica*"—which it now appears does not belong to the genus, or even to the same family, but must be referred to *Saxicava* amongst the *Gastrochamidae*.

In *P. Aldrovandi* all the visible portion of the mantle and the long united siphons are clothed with thick, brown *epidermis*, striped with black, and very much wrinkled by the contraction of the animal in alcohol: it was impossible, without dissection, to see whether the orifices of the siphons were fringed as in *Mya*. The anterior gape of the shell exhibits an oval space, perforated in the centre by a small pedal orifice, scarcely large enough to admit the little finger.

By lifting up one valve and removing the portion of the mantle within the pallial line, the internal organs were seen and sketched.

The body is large and oval, suspended by four muscles whose attachments are close to those of the adductors; it is truncated in front, where it supports a small finger-like muscular foot; behind it is produced into a blunt point.

The *oral palpi* are triangular and pointed, but were probably larger and broader during life; they are deeply plaited inside, with a plain posterior border.

The gills are two on each side; the *inner* gills extend from the base of the respiratory siphon to the palpi, between which they are received; they are deeply plaited, the plaits being in pairs, and the lower edge of the gill is grooved. The inner dorsal margins are not

* Journ. Conch. vol. ii. 1851.

united to the body, so that the dorsal channels are only closed by the apposition of the parts.

The *outer gills* are simpler in structure, being formed of a single series of vascular loops placed one behind another; the free edge is not grooved, and the gill terminates in front some way behind the inner gill. The dorsal margin of the outer lamina is expanded beyond the line of suspension, and is fixed.

The gills of the opposite sides are united to each other behind the body and to the branchial septum.

The whole structure is closely like that of *Mya arenaria*, the chief differences being the shortness of the palpi, and the inequality of the gills.

There are six other reputed species of recent *Panopæa*.

1. *P. ABBREVIATA*, Val.; discovered by M. d'Orbigny on the coast of Patagonia between the R. Negro and S. Blas. This shell appears to have been again met with by the U. S. Exploring Expedition, under Commander Wilkes, and is described by Dr. Gould as *P. antarctica*.

2. *P. ZELANDICA*, Quoy; of which an odd valve only was picked up on the beach.

3. *P. SOLANDRI*, Gray; probably the same as the last.

4. *P. AUSTRALIS*, G. Sby. (Genera of Shells, pl. 40. f. 2), one of G. Humphrey's shells from New South Wales; of which there is a series in the British Museum, from Tasmania.

5. *P. AUSTRALIS*, Val. (not Sowerby's.)

This species is as large as *P. Aldrovandi*, and very like it. Being quite distinct from the *P. australis* of Sowerby, it is proposed to call it *P. natalensis*.

It was discovered in the sandy bays of Port Natal, by Capt. Cecile and the officers of the French frigate 'Heroine,' who observed the tubes of the shell-fish projecting through the sand at low water.

"The sailors endeavoured to draw the creature out of its habitation by the tube, but in vain; for the siphons, after offering considerable resistance, in every instance gave way, and often were withdrawn entire, in spite of the grasp of its persecutor. Curious to know the nature of the being which thus escaped them, they dug for it with spades, and at length uncovered the *Panopæa* buried several feet below the surface of the sand, and gregarious*."

6. *PANOPÆA JAPONICA*, A. Adams. Zool. Proc. for 1849, p. 170. Pl. VI. f. 5. This species, of which the original and unique example is in the Leyden Museum, is much like the fossil *P. intermedia* of the London clay.

7. *P. GENEROSA*, Gould; Puget Sound, Oregon. (U. S. Expl. Exped.)

8. *PANOPÆA NORVEGICA*, Spengler, is found throughout the Arctic seas, from Behring's Straits to Newfoundland, the North Sea and Russian Lapland.

I was so convinced of the affinity of this shell to the *Saxicava*, that (in my Manual) I placed the latter genus next to *Panopæa*; it now

* Forbes, i. p. 174, from Valenciennes' Archives du Museum, t. i. 1839.

appears that I should have left it in its former place with *Gastrochæna* and have removed the *Panopæa Norvegica* to it. The shell differs from *Panopæa* in having the pallial line broken up or divided into a number of separate spots, and the animal has very long tapering gills, prolonged far into the branchial siphon.

9. *PANOPÆA MIDDENDORFFII*, A. Adams. Zool. Proc. for 1854, p. 137. Arctic Seas. (Haslar Museum.) Appears to be a variety of *P. Norvegica*.

The Geographical Distribution of the genus *Panopæa* affords an illustration of the rule, or "law," so earnestly investigated by the late Prof. E. Forbes,—that the range of *genera*, as well as of *species*, depends in great measure on their geological antiquity; and that when the members of a group are scattered over the greater part of the world, we may expect to find evidence of their existence in the intervening spaces during a former age. M. D'Orbigny describes 139 extinct species of *Panopæa*, commencing in the *Permian* age, and occurring in every part of the world where secondary or tertiary strata have been found.

7. DESCRIPTIONS OF TWENTY-FIVE NEW SPECIES OF SHELLS FROM THE COLLECTION OF HUGH CUMING, ESQ.

By ARTHUR ADAMS, F.L.S., &c.

1. *TUDICLA ARMIGERA*, A. Adams. *T. testa turbinato-fusiformi, epidermide fulvicante induta, spira obtusiuscula, apice mamillato; anfractibus planis, in medio serie spinarum ornatis, spinis tubulosis, regularibus, subrecurvatis, liris transversis, elevatis, squamulis, aculeatis instructis, et interstitiis lineis elevatis simplicibus; anfractu ultimo serie secundo spinarum ad partem anticam ornato; apertura ovali, intus alba, columella triplicata, canali recto producto; labro intus lirato.*

Hab. Moreton Bay (*Mr. Strange*). Mus. Cuming.

This species is at once distinguished from the other known examples of *Tudicla* on account of the spiny armature of the whorls.

2. *FUSUS SPIRALIS*, A. Adams. *F. testa fusiformi, tenui, albida, spira elevata, anfractibus spiralibus, convexis, ad suturas contractis, transversim liris, in medio angulatis, carina tuberculata et carina altera infima subsimplice instructis; apertura ovali, labio intus lævi; labro intus sulcato, canali elongato, recto.*

Hab. New Zealand. Mus. Cuming.

This is a beautiful and elegant spiral shell, very strongly reminding one of the young of some unknown species of *Gladus* (*Rostellaria*) with the whorls spiral, and where the outer lip is undeveloped.

3. *FUSUS DILECTUS*, A. Adams. *F. testa fusiformi, subventricosa, spira mediocri; fulvicante, strigis irregularibus, fuscis longitudinalibus picta; anfractibus ad octo, convexiusculis, supremis costato-plicatis, liris elevatis, transversis, crenulatis, majoribus cum minoribus alternantibus, interstitiis longitudinaliter crebre*

striatis, apertura elongato-ovali, labio transversim corrugato; labro rufo-marginato, intus sulcato; canali longiore, viz testam æquante, subreflexo, ad sinistram curvato.

Hab. Venezuela. Mus. Cuming.

A very elegant *Fusus* reminding one somewhat in markings, form, and sculpture of an elongated *Sycotypus* (or *Ficula*).

4. *FUSUS ALBINUS*, A. Adams. *F. testa ovato-fusiformi, subventricosa, candida, spira mediocri; anfractibus octo, convexis, longitudinaliter costato-plicatis, plicis, ad suturas, obsoletis, liris transversis crebris cinctis; apertura elongato-ovali, labio lævi; labro intus sulcato, canali mediocri recto, aperto.*

Hab. Ichaboe, West Africa. Mus. Cuming.

This is a large, white, solid species with a moderately long beak, and with longitudinal, rounded, rib-like plicæ which are obsolete at the sutures.

5. *FUSUS ASSIMILIS*, A. Adams. *F. testa elongato-fusiformi, fulvicante, epidermide tenui, fusco induta; spira elongata, acuta; anfractibus decem, rotundatis, longitudinaliter plicato-costatis, costis latis, medio subnodulosis, transversim valde liratis, liris æqualibus, subdistantibus; apertura parva, ovali, labio producto, intus transversim rugoso; labro margine crenulato, intus sulcato; canali longiore, fere clauso, recto.*

Hab. China Seas. Mus. Cuming.

Somewhat resembling in form and sculpture the *F. turricula*, Kiener, but the outline of the whorls is nodosely ungulated.

6. *FUSUS NODICINCTUS*, A. Adams. *F. testa elongato-fusiformi, dilute rufa, rufo-ferrugineo variegata; spira elongata, acuta; anfractibus convexis, transversim liratis, longitudinaliter nodosoplicatis, plicis in medio anfractuum tuberculatis productis; apertura ovali, labio transversim corrugato; labro intus sulcato, canali mediocri, recto, aperto.*

Hab. Australia. Mus. Cuming.

In this species the whorls are encircled with a series of conspicuous, rib-like nodules, and the shell is variegated with rusty-brown, of which there is a distinct transverse band on the last whorl.

7. *AMPHIPERAS (OVULUM) TRAILLII*, A. Adams. *A. testa elongata, in medio angulata, carnea, albo marginata, lineis transversis, impressis, obsoletis, cincta; apertura angusta, canalibus brevibus, valde emarginatis; labio intus lævi, sulco longitudinali instructo, postice tumido; labro in medio recto, transversim sulcato, extus albi-varicoso.*

Hab. Malacca (*Dr. Traill*). Mus. Cuming.

This is an elongated species, somewhat angulated on the back, of a pale flesh-tint in some varieties, and of a deeper pink in others, and with the varix of the outer less white. In form it resembles, most closely, *O. formosum*, Sow., but that species is crossed with punctate, spiral lines.

8. *POLYDONTA MARIÆ*, A. Adams. *P. testa turbinato-conica, granulata, albida, rubro maculata ac flammulata; anfractibus convexiusculis, ultimo rotundato, plicato-noduloso, et, ad suturas, corrugato, granulis in seriebus permultis, æqualibus, regularibus, confertis, dispositis, basi cingulis granosis exsculpta, cavitate contorta, umbilicum mentiente, cingulo elevato, in dente unico terminato, exhibente; labro intus sulcato.*

Hab. —? Mus. Cuming.

A very beautiful, finely-granulated species, with the last whorl rounded, and having many of the characters of *Clavicularius*, thus showing the close affinity of the two genera.

9. *DOSINIA DESHAYESII*, A. Adams. *D. testa solida, subventricosa, cordato-orbiculari, rufescente, albo variegata, concentrice lamellosa, lamellis incrassatis, æqualibus, lunula profunda, cordata, umbonibus acutis, incurvatis, divergentibus, margine dorsali postico declivi, viz arcuato; intus alba, fascia lata purpurea postice ornata; sinu siphonali obliquo, obtusiusculo.*

Hab. North Australia. Mus. Cuming.

Like the brown varieties of *D. scalaris* in size and general appearance, but the lamellæ are sharper and more produced, the valves are more ventricose, the lunule is wide, deep and cordiform, the lozenge has rugose angulated ridges, and there is a broad purple streak in the interior of the valves.

10. *DOSINIA CORYNE*, A. Adams. *D. testa solida, cordato-orbiculari, subcompressa, luteo-albida, nitidiuscula, concentrice striata, striis confertis, viz lamellosis, incrassatis, æqualibus, lunula cordata, valde impressa, area lanceolata profunda, marginibus elevatis, acutis; margine dorsali viz arcuato; sinu siphonali obliquo, apice obtuso; intus alba.*

Hab. Van Diemen's Land (*Mr. Gunn*). Mus. Cuming.

A solid, rather compressed, and shining species, with the disk of the valves nearly smooth owing to the slight elevation of the striæ; the colour is pale yellowish white.

11. *DOSINIA LINEOLATA*, A. Adams. *D. testa solida, subventricosa, cordato-orbiculari, nitida, albido-cinerascente, ad umbones rufescente, lineolis radiantibus, interruptis ornata; concentrice plicata, plicis incrassatis, subimbricatis, glabratibus; lunula profunda, cordata; umbonibus subincurvatis, antevergis, divergentibus; margine dorsali postico declivi, arcuato; area lanceolata profunda, marginibus elevatis angulatis lamellosis; intus alba; sinu pallii impressionis acuto.*

Hab. Borneo. Mus. Cuming.

The hinge in this species is very thick, and the teeth are very strong; the interior is strengthened, near the beaks, with a callous deposit. The surface is prettily marked with fine, irregular, longitudinal lines.

12. *DOSINIA TRAILLII*, A. Adams. *D. solidiuscula, subcompressa, orbiculato-quadrata, alba, viz æquilaterali, umbonibus levibus.*

parvis, viz centralibus, lunula oblongo-cordata; concentrice striata, striis medio confertis, elevatiusculis, nonnullis utrinque obsoletis, alteris postice erectis, lamellatis, productis; area lanceolata angusta, marginibus regulariter lamellosis; margine dorsali declivo; margine neutrali producto, rotundato; intus alba.

Hab. Malacca (*Dr. Traill*). Mus. Cuming.

The striæ are alternately obliterated towards the sides, which produces a crowned appearance in the middle of the valves. Like *D. Gruneri*, Phil., it is strongly plicate at the lozenge.

13. *DOSINIA CYDIPPE*, A. Adams. *D. testa solidiuscula, subventricosa, albida, ad umbones luteola, rotundato-cordata, concentrice striata, striis confertis, viz elevatis; longitudinaliter radiatim crebre striata, lunula oblongo-cordata, umbonibus lævibus, area lanceolata angusta; intus alba; sinu pallii impressionis obliquo, profundo, apice obtuso.*

Hab. Van Diemen's Land (*Mr. Gunn*). Mus. Cuming.

This is a neat-looking species, without any great distinguishing peculiarity, except that, under the lens, the concentric, elevated striæ are finely engraved with radiating lines.

14. *DOSINIA SIMPLEX*, A. Adams. *D. testa solida, compressiuscula, subquadrato-cordata, alba, inæqualiter, concentrice striata, striis confertis, incrassatis, inæqualibus, lunula oblongo-cordata, umbonibus lævibus, antevergis, area lanceolata angusta, margine dorsali viz arcuato, latere postico subtruncato, subsinuato; sinu pallii impressionis lato, apice obtuso; intus alba.*

Hab. Singapore. Mus. Cuming.

In this species the elevated concentric striæ are irregular, some being more elevated than the others; the posterior side of the shell is somewhat sinuated, and the sinus of the pallial line is very wide with an obtuse apex.

15. *DOSINIA DILECTA*, A. Adams. *D. testa tenui, subventricosa, orbiculato-cordata, alba, lamellis concentricis, distantibus, tenuibus, postice productis erectis, ornata; interstitiis nitidis, transversim striatis; lunula cordata, medio elevata; area lanceolata angusta, marginibus lamellosis; margine dorsali regulariter arcuato; intus alba.*

Hab. Malacca (*Dr. Traill*). Mus. Cuming.

A very elegant species, of a delicate structure, with the lamellæ thin and wide apart; the interstices shining and concentrically striated; and with the lozenge margined with elevated laminæ.

16. *DOSINIA EUNICE*, A. Adams. *D. testa solida, compressiuscula, orbiculato-cordata, alba, nitida, radiatim obsolete sulcata, concentrice striata, striis confertis, elevatis, æqualibus, utrinque erectis, sublamellaceis; lunula triangulari, valide impressa, lamina cardinali producta, acuta, area lanceolata marginibus angulatis; intus alba; sinu pallii impressionis obliquo, profundo, angulato.*

Hab. —? Mus. Cuming.

Dec. 11th, 1855.

Dr. Gray, F.R.S., in the Chair.

The following papers were read :—

1. CHARACTERS OF TWO NEW SPECIES OF TANAGERS.

BY PHILIP LUTLEY SCLATER, M.A.

(Aves, Pl. CX.)

1. DUBUSIA AURICRISSA.

Dubusia cyanocephala ? Sclater, P. Z. S. 1855, p. 157.

D. supra flavescens-olivaceo-viridis: capite nuchaque cæruleis: loris nigris: subtus cærulescenti-cinerea: tectricibus subalaribus et ventre imo crissaque cum tibiis vivide aureo-flavis.

Long. tota 65, alæ 3·6, caudæ 3·0.

Hab. in Nova Grenada, Bogota.

Obs. Species *D. cyanocephalæ* simillima, sed rostro minore, colore dorsi flavescens-olivaceo, capitis cæruleo magis extenso, ventre cærulescenti- neque albescenti-cinereo, et tectricibus subalaribus necnon ventre imo crissoque cum tibiis vivide aureoflavus.

Since compiling the list of Bogota birds, in which I have included this species under the name *Dubusia cyanocephala* ?, I have examined D'Orbigny's types of that bird in the Paris Museum, and find them so different from the present as to lead me to conclude that they are specifically distinct.

The present bird—which must be considered as the representative of *D. cyanocephala* in the mountain ranges of New Grenada—is common in collections from Bogota. The British Museum contains examples of both the species. Those of *D. cyanocephala* were procured by Mr. Bridges in Bolivia.

2. IRIDORNIS PORPHYROCEPHALA. (Pl. CX.)

Tanagra analis, Tschudi in Mus. Berolinensi.

I. supra purpurea, dorso imo et marginibus alarum et caudæ viridescentibus: fronte, loris, mento summo et regione auriculari nigris: gutture late et late aureo-flavo: pectore summo purpurascens; ventre viridescens, medialiter rufescens-ochraceo: ano intense ferruginescenti-castaneo: tectricibus alarum inferioribus viridescentibus: rostro superiore nigro, inferiore albo.

Long. tota 5·6, alæ 3·0, caudæ 2·2.

Hab. in Nova Grenada et rep. Equatoriana.

Obs. Affinis *Iridornithi anali*, sed capite dorsoque summo purpureis, pectore purpurascens et ventre viridescens facile distinguenda.

When at Berlin in 1854 I first noticed a specimen of this Tanager, which is in the Museum there under the name "*Tanagra analis*, Tschudi." But having just before that had the opportunity of examining type specimens of the latter bird in the collections of Bruxelles and Bremen, I saw at once that the present was to all

appearances a distinct although closely allied species, and accordingly assigned to it a new name in my MS. At Neufchatel I again saw Tschudi's *analis* (the types described in the *Fauna Peruana* being contained in the Museum at that place), and I was also so fortunate as to obtain by exchange, through the courtesy of M. Coulon, the Directeur of the Museum there, a duplicate example of that species. Upon comparing this with a skin lately received by Mr. Gould along with other birds from the neighbourhood of Quito, I find the same differences as I had previously noted in the Berlin Museum specimen; and, fortified by a second example, no longer hesitate to introduce the bird as new to science under the title of *Iridornis porphyrocephala*.

2. DESCRIPTIONS OF (SUPPOSED) NEW SPECIES AND VARIETIES OF SHELLS, FROM THE CALIFORNIAN AND WEST MEXICAN COASTS, PRINCIPALLY IN THE COLLECTION OF HUGH CUMING, ESQ. BY PHILIP P. CARPENTER.

1. PANDORA CLAVICULATA.

P. t. magna, complanata, alba, epidermide fusca induta; antice curtissima, postice valde rostrata; rostro lato, valde projiciente, sulco in utraque valva ab umbone currente; concentrice undulata; margine ventrali maxime excurvato; margine dorsali postico sub-irregulariter arcuato; cardine lira (quasi clavicula) ligamentum ferente praelonga, dimidium ab umbone rostrum versus decurrente; dente antico satis producto; valva dextra denticulo tertio inter alios munita; cicatricibus muscularibus, antica rotundata, postica ovali, a margine valde distantibus, inter quas punctularum catena; aliter pagina interna haud punctata.

Long. 1.23, lat. 1.78, alt. .22 poll.

Hab. Mazatlan: legit "Conway Shipley, Esq.", olim Lieut. R.N. Mus. Cuming.

This magnificent species differs from similar forms found in the Philippines and New Zealand, in having the fold much larger, with the dorsal margin less arcuated. In form it closely approximates the Californian species, *P. punctata*, Conr.; but differs in the absence of punctures (except at the pallial line), and in the remarkable character of the hinge. In *P. punctata*, the ligament is (in one valve) affixed to the outer margin, which is bent upwards to receive it at right angles; in this, there is a sharp internal ridge, or clavicle, fully one half of the entire length from the umbo to the beak, at the base of which the ligament is situated.

2. LYONSIA (OSTEODESMA) DIAPHANA.

L. t. valde inaequilaterali, irregulari, sed plerumque pyriformi; al-bida, tenuissima, translucida; epidermide nitida, albo-fusca induta; parte antica parva, satis excurvata; parte postica maxime pro-longata, margine dorsali incurvato; margine ventrali excurvato,

plerumque plus minusve hiante; appendice ligamenti calcarea prolongata.

Long. .56, lat. .92, alt. .34 poll.

Hab. Mazatlan: legit C. Shipley, Esq. Mus. Cuming, Archer, Darbishire, &c.

A small species, nearly as glossy as *O. nitidum*, Gould, from California. In form it resembles *L. cuneata*, Gray, but is of a much lighter colour and thinner texture, and is not truncated at the anterior margin. The specimens brought by — Thorne, Esq., Paymaster of the Navy, vary greatly in the amount of pedal gape, which in most of Lieut. Shipley's specimens is scarcely perceptible.

3. PERIPLOMA EXCURVA.

P. t. "*P. Leanae*" *simili, sed minus inaequaliter, margine ventrali maxime excurvato, postice et antice magis hiante, minus aequivalva, fossa cardinali et clavicula gracilioribus; magna, tenui, ventraliter arcuata, striis incrementi gracillimis; epidermide tenuissima, viz antice rugosa; cicatricibus muscularibus et pallii margini appropinquantibus, sinu modico, subtriangulato.*

Long. 2.06, lat. 2.46, alt. 1.05 poll.

Hab. Mazatlan, teste Dr. Grüner. Mus. suo.

A very fine species, differing from *P. Leana*, Conr. (not to be confounded with *Cochlodesma Leana*), and from *P. argentaria*, Conr., in being much less inequilateral, with the ventral margin well rounded.

4. PERIPLOMA PAPYRACEA.

P. t. suborbiculari, inaequaliter, inaequivalva; parte postica brevissima, rostrata, rostro curto, lato; tenuissima, diaphana, albida; superficie striis incrementi tenuibus, lineas radiantes huc et illuc viz monstrante, granulis minimis induta, epidermide tenuissima; umbonibus prominentibus; marginibus ventralibus et dorsalibus anticis subaequaliter excurvatis, posticis subincurvatis; fossa cardinali parva, solida, clavicula solidiuscula; sinu pallii ore angustiore, intus lato, viz angulato.

Long. .78, lat. 1.06, alt. .42 poll.

Hab. Mazatlan. Mus. Cuming.

A perfect valve, and a broken pair displaying the hinge *in situ*, are all that are known of this beautiful species. It differs from the others in its outline, the greater part of which is suborbicular, with a short broad beak.

5. THRACIA SQUAMOSA.

T. t. "*T. villosiusculæ*" *simili, sed magis transversa; superficie granulis distinctioribus instructa; ligamento extus curtiori, intus fulcro majore, minus declivi; sinu pallii angustiore, magis producto.*

Long. .72, lat. 1.14, alt. .38 poll.

Hab. Mazatlan: legit C. Shipley, Esq. Mus. Cuming.

Remarkably like the British species, from which it differs,—in the

shape, which is rather more transverse, lengthening the pallial sinus; in the external granules, which are somewhat coarser; and in the ligamental pit, which is rather larger, and therefore at a greater angle from the margin.

6. ? SCROBICULARIA PRODUCTA.

? *S. t. candida, tenui, sublevi, striis incrementi exillimis, confertis; antice et ventraliter maxime producta; margine anteriore bene excurvato, postico valde undato, ventrali subincurvato; umbonibus prominentibus, appressis; lunula indistincte impressa; ligamentis, externo magno, interno minimo, alteri adjacente; dentibus cardinalibus duobus, quarum alter bifidus, alter minimus; cicatricibus muscularibus, antica elongata, angusta, marginem ventralem appropinquante; postica subquadrata, intus undulata; sinu pallii maximo; pagina interna cardinem versus undulata.*

Long. 1.45, lat. 1.88, alt. .7 poll.

Hab. Sinu Californiensi: legit C. Shipley, Esq. Mus. Cuming.

Resembles *S. angulata*, Chemn., but differs in the great production of the anterior ventral portion, in the development of the wave, and in the length of the external ligament. This and the following species form connecting links between *Scrobicularia* and *Tellina*.

7. ? SCROBICULARIA BIANGULATA.

? *S. t. suborbiculari, subæquilaterali, convexiuscula, striis concentricis vix regularibus, postice undata, angulis duobus subobsoletis; ligamento externo tenuissimo, in sulcos alte impresso, semi-interne sito; ligamento interno fossa trigonali scalena sito, alteri adjacente; dentibus cardinalibus in utraque valva duobus, contiguus, vix radiantibus; cicatricibus muscularibus subovalibus, sinu pallii maximo; alba, intus aureo tincta.*

Long. 1.5, lat. 1.78, alt. .8 poll.

Hab. Sta. Barbara; legit T. Nuttall, Esq. Museo suo.

Differs from *S. producta* in form and texture, and also in the comparative size of the external ligament, which in this species is situated in a semi-internal furrow.

8. DONAX SEMISTRIATUS.

D. t. parva, valde transversa, tumidiore; parte superficiei antica levi, nitida; reliqua concentricè sulcata, sulcis impressis, interdum bifurcatis; striisque radiantibus evanescentibus, sulcos punctantibus; sulcis in parte postica valde cælatis; aureo-fuscus, ad umbones rubro-fuscus radiatus; margine simpliciter crenulato.

Long. .4, lat. .8, alt. .2 poll.

Hab. in Sinu Californiensi. Mus. Cuming.

Somewhat resembles *D. pulchellus*, Hanl., but differs in the markings, the anterior third of the surface being quite smooth, while the remainder is furrowed with rather distant concentric lines, ending suddenly, and slightly indented by evanescent striulæ.

9. DIPLODONTA SUBQUADRATA.

D. t. subquadrata, valde inæquilaterali, antice brevi; tenui, albo-

flavescente, epidermide tenuissima; striis incrementi exillimis, ligamento subexterno; dentibus cardinalibus parvis; lateralibus antico in utraque valva acuto, postico subobsoleto; cicatricibus muscularibus, antica a cardine remota, elongata, intus crenulata; postica irregulariter pyriformi; linea pallii margini appropinquante.

Long. .76, lat. .89, alt. .57 poll.

Hab. Mazatlan. Mus. Cuming.

In shape like *Lucinopsis undata*; remarkable for the anterior lateral teeth.

10. CHITON MONTEREYENSIS.

C. t. ovata, subelevata (ad angulum 120°), sublavi; olivacea, valva utraque ad jugum rubro-fusco maculata, lineis tenebrosioribus valvis intermediis subradiantibus, valvis ultimis radiantibus; valvis intermediis lineis diagonalibus subdistinctis, ad marginem subquadratis, suturis conspicuis; arcis lateralibus lineis paucis radiantibus obsoletis; tota superficie punctulis creberrimis conferta, subobsoletis, maxime ad areas laterales; mucrone vix prominente; limbo coriaceo, ad marginem et in suturis piloso, setis planatis, curtis, incurvatis; intus valvarum marginibus haud valde arcuatis, sinu parvo, ad jugum subimpresso.

Long. 2.4, lat. 1.42, alt. .45 poll.

Hab. Monterey, rupibus ad undarum tumultum expositis: legit

— Hartweg. Mus. Cuming.

Margin with numerous but not crowded, short, incurved, horny, flattened hairs; shell very finely sculptured, dark olive, with very dark rays slightly diverging from the summit of each valve, and very conspicuous on the terminal one. The jugum is stained in each valve with sienna.

11. CHITON HARTWEGII.

C. t. ovata, subelevata (ad angulum 125°), sublavi; olivacea, macula nigra in utroque jugi latere picta; valvis sine lineis diagonalibus, partim detritis, lineis incrementi conspicuis, tota superficie minutissime irregulariter subgranulosis; marginibus rotundatis, suturis magnis; limbo tenui, granulis minimis, confertissimis, irregulariter munito; intus valvarum marginibus arcuatis, lobis prominentibus, sinu lato, haud alto; ad jugum vix impressus.

Long. 1.26, lat. .76, alt. .18 poll.

Hab. Monterey, cum præcedente: legit idem diligentissimus. Mus. Cuming.

A much smaller shell than the last, almost destitute of sculpture; with a blackish spot on each side of the jugum, but no radiating lines.

12. CHITON NUTTALLI.

C. t. "Chitoni Hartwegii" simili, sed latiore, depressa (ad angulum 130°), superficie granulis majoribus, maxime marginem versus;

marginibus quadratis, suturis nullis; intus valvarum marginibus valde arcuatis, sinu lato, alto.

Long. 1·05, lat. ·8, alt. ·24 poll.

Hab. Monterey, cum præcedentibus; legit idem diligentissimus, et olim, primus in eas oras perscrutator, clarissimus T. Nuttall. Mus. Cuming et Nuttall.

A small specimen in Mr. Cuming's collection was passed over as the young of *C. Hartwegii*; but a fine one in Mr. Nuttall's collection distinctly displays the points of difference above indicated, which at present appear of specific value. This specimen has much the appearance of a young *Ch. articulatus*, but differs essentially in the character of the ligament.

13. CHITON REGULARIS.

C. t. elongata, elevata (ad angulum 110°), fusco-olivacea, jugo acuto; valvis intermediis lineis diagonalibus haud conspicuis; areis lateralibus et valvis ultimis strigis radiantibus, areis centralibus strigis longitudinalibus, parallelis; mucrone parvo; marginibus valvarum subrotundatis, suturis modicis; limbo squamoso, squamis oblongis, irregulariter tessellatis; intus valvarum marginibus haud valde arcuatis, sinu lato, haud alto; ad jugum linea impressa.

Long. 1·1, lat. ·58, alt. ·25 poll.

Var. T. cærulea, strigis prope marginem subgranulosis.

Hab. Monterey; sub saxis legit — Hartweg. Mus. Cuming.

A very similar species, but with larger scales on the margin, is from New Zealand, and at present undescribed in the Cumingian Collection.

14. CHITON ACUTUS.

C. t. ovata, valde elevata (ad angulum 105°), tenui; olivacea, interdum maculis tenebrosioribus; lineis diagonalibus vix monstrantibus; areis lateralibus et valvis ultimis tenuissime granulosis, granulis longis, irregulariter radiantibus; areis centralibus iisdem lineis longitudinalibus undatis instructis; marginibus valvarum subquadratis, suturis parvis; jugo acuto, mucrone inconspicuo; limbo angusto, sublævi, tenui; intus virescente, valvarum marginibus et jugo impresso albidis; valvarum marginibus vix arcuatis, sinu parvo, inciso.

Long. ·9, lat. ·5, alt. ·2 poll.

Hab. Sta. Barbara: olim legit T. Nuttall. Mus. suo.

A very sharply angled, thin, delicately marked species, with extremely thin margin, and the edges of the valves deeply cut within.

15. CHITON ORNATUS, Nutt. MS.

C. t. subrotundata, depressa (ad angulum 130°), fusco-olivacea, utraque parte jugi tenebrosius maculata; lineis diagonalibus, et in ultima valva lineis x. radiantibus, nodulis validis instructis; areis lateralibus et valvis ultimis nodulis radiatim instructis; areis centralibus lineis nodulosis longitudinalibus, vix undatis, interstitiis alte decussatis; valvarum marginibus subquadratis,

suturis parvis; mucrone vix monstrante; intus virescente, rufo tincta; marginibus valvarum valde sinuatis, sinu angulato; ad jugum vix impressa; limbo valde piloso, setis longis, fortibus, incurvatis.

Long. 1·05, lat. ·8, alt. ·22, poll.

Hab. San Diego; olim legit T. Nuttall. Mus. suo.

The sculpture of this species is very strongly marked; the marginal hairs rather long, short and crowded*.

16. *PATELLA* ? *TOREUMA*, var. *TENUILIRATA*.

P. t. valde depressa, oblonga, diaphana; colore corneo, fusco-purpureo irregulariter flammato; liris circiter xxii., tenuissimis, interstitiis obsolete striatis; apice subprominente, circiter quinta parte longitudinis sita; pagina interna valde iridescente.

Long. 1·38, lat. 1, alt. ·28, poll.

Hab. Monterey; legit — Hartweg. Mus. Cuming.

This shell appears to agree with *P. toreuma*, Rve., in all essential respects; but instead of the fine regular striæ of that species, there are a few delicate principal ribs, with obsolete striæ between. As its neighbour, *P. Oregona*, sometimes develops large ribs, and is at other times nearly smooth, this has not been considered a sufficient difference to constitute a species, until more is known of its variable powers.

17. *GALERUS*? *SINENSIS*, var. *FUSCUS*.

G. ? Sinensis, t. rufo-fusca, huc et illuc lineis declivis instructa.

This shell, marked "Gulf of California," Mus. Cuming, but without authority, differs essentially from *G. mamillaris*, Brod. (= *regularis*, C. B. Ad.), and is not to be distinguished from the British specimens of *G. Sinensis*, except by the colour, and by a few irregular diagonal lines here and there, which are probably an individual peculiarity. In the collection of R. M'Andrew, Esq. are several specimens of the true *G. Sinensis* from the Mediterranean, of an equally dark colour. It is impossible, therefore, to found a specific distinction on this circumstance alone. It is here described in order to direct the attention of collectors in that region to the subject. It would be very remarkable should the species be proved to inhabit so remote a locality. The specimen in question may have been imported.

18. *GALERUS SUBREFLEXUS*.

G. t. irregulari, conica, rufo-fusca, radiatim tenui-striata; striis aculeatis; sutura impressa; vertice involuto, apice depresso; lamina interna apicem versus ad duas trientes reflexa, umbilicum magnum monstrante, margine dilatata, haud angulata.

Lat. ·75, alt. ·4, poll.

Hab. In Sinu Californiensi. Mus. Cuming.

* The specimens described not being my own property, I did not dare to examine the insertions of the valves with a view to determine the genus. It is possible that some of these species have been already described by Dr. Gould in the Expedition Shells (pp. 5, 6), the plates to which are, alas! not yet published.

Differs from *G. striatus*, Brod. (which must not be confounded with *Dispotæa striata*, Say), in its much more delicate, irregular, finely spinous striæ; and in the form of the internal laminæ, which in this species is reflected back over two-thirds, in *G. striata* over the whole, forming a much larger umbilical region. The vertex of this shell is rather prominent, and is formed like a tumid *Planorbis*, with a sunken apex.

19. FISSURELLA NIGROCINCTA.

F. t. ovali, lata, conica; alba, lineis nigris radiantibus eleganter picta; striis radiantibus tenue cæolata; apertura subcentrali, obscure trilobata; intus alba, margine tenue crenulato, denticulis nigris; callositate alba, linea nigra cincta.

Long. .75, lat. .52, alt. .3, poll.

Differs from the young of *F. alba* in its greater breadth, less compressed growth, finer striæ and crenulations; from *F. nigropunctata*, in the black line round the callosity; and from both in the form of the hole, which is trilobed, not contracted in the middle.

20. CALLOPOMA (TURBO) ? FLUCTUATUM, var. DEPRESSUM.

C. t. valde depressa, anfractibus v., quarum ultimus tumidus, sutura impressa; liris spiralibus circiter xxx., quarum plerumque v. majores sunt, subrugosis; viridi, punctis albis transversim in liris subirregulariter dispositis; apertura ad basin posteriusque producta; columella paulum excavata, non umbilicata.

Long. 2.02, lat. 2.04, long. spir. .78, poll.; div. 110°.

Hab. California. Mus. Cuming.

Syn. *Turbo fluctuatus*, var., Rve. Conch. Ic. pl. viii. f. 34.

Among many hundred specimens examined of the true *C. fluctuatum* from the Mazatlan Collection, there was not one approaching this shell. Nevertheless, as there is in the British Museum a somewhat intermediate form, it may possibly be a variety of that species. The opeculum is unfortunately wanting in Mr. C.'s specimens: until that has been examined, the point must remain in abeyance.

21. LITIOPA DIVISA.

L. t. parva, anfractibus ix., quarum vi. primi subturriti, liris transversis striisque spiralibus decussati, ultimique tres subleves sunt, tumidiores, striulis plus minusve appressis, spiralibus, maxime ad basin, tenuissime ornata; nonnunquam linea suturam impressam subeunte; subdiaphana, fusca; labro acuto; labio vix monstrante; columella truncata, infra maxime undata.

Long. .13, lat. .06, long. spir. .07, poll.; div. 30°.

Hab. Cape San Francisco: legit clar. Hinds. Mus. Cuming.

This is the only species hitherto recorded from the west coast of N. America; the ?*L. saxicola* of C. B. Ad. not belonging to the genus. Exactly the same species was taken in abundance "among small drifted canes, Straits of Sunda," Mus. Archer. It is remarkable for the different character of the first six and the last three

whorls; the decussated portion suddenly becoming smooth, the joining whorl being often irregular in growth.

22. SCALARIA REFLEXA.

S. t. turrita, anfractibus x. valde disjunctis, laevibus; varicibus in anfractu utroque v. magnis, valde prominentibus, ad marginem reflexis, supra in spira brevi semitubulari productis; lineis varicum subspiralibus; vertice laevi; apertura circulari, ad basin haud umbilicata.

Long. .6, lat. (*spinas includens*) .21, long. spir. .45, poll.; div. 40°.

Hab. San Blas, prope Sinum Californiensem; unicum legit — Donnell, R.N. Mus. Cuming.

Most nearly allied to *S. mitraeformis*, Sow., and remarkable for the large size of the varices, which are reflexed, and produced at the shoulder into a semitubular spout. The varical lines make about one revolution from the apex to the base. In the very young shell the varices are not shouldered, and are more numerous.

3. DESCRIPTION OF TWO NEW SPECIES OF ACTINIA, FROM THE SOUTH COAST OF DEVON. BY E. W. H. HOLDSWORTH.

(Radiata, Pl. V.)

Among various species of *Actinia* collected by me in July last, on the south coast of Devon, two appear to be undescribed, and although of small size, are of some interest in being additions to the fast increasing list of our native zoophytes.

They were found on the rocks near the entrance to Dartmouth harbour, a part of our western coast, which, from its steep rugged character and its luxuriant growth of sea-weeds, presents a fruitful hunting-ground for those in search of marine productions.

The first that I have to notice may be thus characterized :—

Body smooth and cylindrical when fully extended, from half to three-quarters of an inch in height, but very much flattened when contracted; tentacula in four rows, moderately long, slender, and slightly tapering towards the tips, their length regularly diminishing from those of the inner circle outwards. The entire animal has a pale transparent appearance, and the only trace of decided colour about it is found in a narrow dark blue line surrounding the base of each tentaculum, and extending a little in the direction of the mouth, but soon becoming indistinct. Very delicate white lines are at times visible on the surface of the body, but these are probably only the edges of the membranous septa seen through the transparent skin. When this animal is at all roughly handled, the long seminal filaments are thrown out from the mouth in great profusion. This little anemone approaches very closely in many respects the *Ac. candida* of Mr. Gosse, and I am indebted to that gentleman for his ready assistance in determining the differences between them. *Ac. candida* may be distinguished by its possessing fewer tentacles, by the colour

of the body being of a more opaque white, and especially by the narrow lines surrounding each tentaculum being of a reddish-purple tint, and enlarging into a conspicuous spot on each side of its base. In their habits and general appearance they are very much alike, and had I obtained only one example of the pale species, I should hardly have ventured to consider it more than a variety. Ten specimens, however, were taken from different places, and did not vary except in size; they were found on the exposed surface of perpendicular rocks at about half-tide mark, and when out of the water and contracted, were very difficult to distinguish, owing to their great transparency. I propose for this species the name of *pallida*.

It has been my custom, after any expeditions in search of *Actinæ*, to bring home one or two plants of *Laminaria digitata*, in order to examine at my leisure the various forms of animal life commonly met with among their tangled roots; and it was on one of these plants I found, in company with minute *Ophiocomæ*, green *Nereides* and numerous other animals, the beautifully marked anemone that I have now to describe.

It has the following characters:—

Body elongate, cylindrical, about three-quarters of an inch in length, when extended, the upper half covered with numerous pale perforated warts, increasing in number as they approach the top, and from which the white filaments are protruded when the animal is irritated. Tentacula in five rows. Colour of the body a dark orange, becoming paler towards the base. This species is chiefly remarkable for the beauty of its oral disk, which for colouring and elegance of marking will bear comparison with that of any of the larger kinds. The external half of the disk is of a rich purplish-brown, changing into a light orange tint towards the mouth, the pink tumid lips of which are frequently conspicuous; from near the centre diverge ten or twelve pairs of yellow bands slightly separating as they proceed outwards, and at their extremities partially surrounding the bases of the tentacula, according to the following arrangement. Taking a small segment of the disk, the first tentacle may be said to arise from the space between two pairs of bands, the second being situated within the pair; the band bifurcates near its extremity, and encloses the third tentacle; these branches again divide and form a similar enclosure for the arms of the fourth row: beyond these is a set of very short tentacula; these, as far as I have been able to examine them, are not connected with the yellow bands, but their small size and the difficulty of seeing their entire length when the animal is expanded, render it almost impossible to describe their exact appearance. On the surface of the disk a cream-coloured spot is situated near the base of each tentacle of the first and second rows, those connected with the inner series being farther removed from them than those of the second; the alternation of light and shade produced by this arrangement gives a battlemented appearance to the disk, and adds considerably to the general effect. The tentacula rapidly diminish in size from those of the inner row outwards; they are dark brown at the bases, becoming paler towards the tips, and are encircled by

three well-defined white rings, of which the basal ones are very distinct. Several examples of this species were obtained at extreme low water-mark, from a large mass of detached rocks known as the Mewstone, near the entrance to Dartmouth harbour. They were met with on two or three occasions, but were always found nestling among the roots of *Laminaria digitata*.

A few weeks since, part of a plant of *Laminaria* was sent to me from Devon, and among the roots I found six specimens of an *Actinia* that closely resembled the one just described, excepting that the brown on the tentacula and certain parts of the disk was replaced by various shades of red. These animals differ so little, except in the general colour of the disk and appendages, that until I have an opportunity of examining some more specimens, I must consider the red one as only a variety of the other, and as such I would provisionally describe it. This uncertainty obliges me to depart from the old-established rule of giving the specific name from some marked character in the animal, and I must therefore propose the more general title of *ornata* for the brown species, and suggest that of *rubida* for the red one, should it on future examination prove to be distinct, which I am inclined to think is probable.

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